SOCIAL REACTIONS TO DISCLOSURE OF TRAUMATIC CHILDBIRTH EXPERIENCES: ASSOCIATIONS WITH COPING, POSTTRAUMATIC COGNITIONS, AND TRAUMATIC STRESS AND DEPRESSIVE SYMPTOMOLOGY

by

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Traumatic childbirth experiences can contribute to symptoms of postpartum depression and posttraumatic stress disorder (PTSD). Negative or unsupportive responses from social partners to disclosure (i.e., communication of personally relevant information, thoughts and feelings) of a traumatic event may maintain symptoms of psychological distress after the stressor has passed. Negative or unsupportive responses to disclosure may influence distress through increased use of maladaptive coping strategies and posttraumatic cognitions. The present study was a mixed methodological investigation into disclosure of traumatic childbirth experiences, social responses to that disclosure, and their relationship with postpartum psychological distress (i.e., depressive and PTSD symptoms) in a sample of women in the first year postpartum following a traumatic childbirth experience ($N = 129$). Mediation analyses assessed maladaptive coping and posttraumatic cognitions as mediators of the relationship between unsupportive responses to disclosure and postpartum depressive and PTSD symptoms in separate, simple mediation models.

In qualitative analyses, the majority of women identified medical characteristics (>80%) as a contributor to traumatic childbirth appraisal. Increased perception of risk was the next most

commonly reported theme (>25%). Over three-in-four women reported that they disclosed their traumatic childbirth to at least one person (78%). The most common disclosure methods were in person (90%) and online (65%), and women most often reported disclosing to individuals with whom they likely had close, personal relationships (87% partner, 82% family, 81% friend). Participants reported that they most often disclosed as a means of coping (90%), and anticipated negative reactions from social partners was the most reported reasons for not disclosing (38%).

There was no difference in severity of postpartum depression or PTSD symptoms between women who did disclose and those who did not. In women who did disclose, degree of unsupportive social responses to disclosure was significantly positively associated with maladaptive coping, posttraumatic cognitions, depressive symptoms, and PTSD symptoms. Maladaptive coping and posttraumatic cognitions were also significantly positively related to depressive and PTSD symptoms in separate analyses. As hypothesized, maladaptive coping and posttraumatic cognitions mediated the relationship between unsupportive social responses to disclosure and depressive and PTSD symptoms in simple mediation analysis.

These results are the first to identify the proportion of women who disclosed a traumatic childbirth experience and explore unsupportive responses from social partners to that disclosure. This is also the first analysis of relationship between unsupportive social interactions, maladaptive coping, posttraumatic cognitions, and psychological distress in a postpartum sample. Results highlight the need for improved postpartum emotional support.

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CHAPTER I: INTRODUCTION

Childbirth is a positive experience for many women, but only half of women report feeling satisfied with their childbirth experience (Chalmers, 2012). Expectations exist as to the constitution of a typical childbirth, and deviations from these expectations can lead to maternal distress. For some women, experiences during childbirth can lead to women appraising their childbirth as a traumatic event (Boorman, Devilly, Gamble, Creedy, & Fenwick 2014). According to the Fifth Edition of the Diagnostic and Statistical Manual (DSM-5) of the American Psychiatric Association (APA; 2013), a traumatic event is an experience during which there is a threat of death or serious injury to oneself or a loved one. In childbirth, obstetric medical events such as emergent Cesarean section (C-section), pregnancy-related health complications such as preeclampsia, and poor infant outcomes necessitating intensive care treatment can pose an actual threat to the health of the mother, her infant, or both individuals (Callahan & Hynan, 2002; Creedy et al., 2000). The presence of these obstetric events can contribute to a mother appraising her childbirth as traumatic, or believing that the threat of death or injury was present (Boorman et al., 2014). Estimates of the prevalence of traumatic childbirth appraisal vary widely, with estimates ranging from 29% to 84% (Alcorn, O'Donovan, Patrick, Creedy, & Devilly, 2010; Boorman et al., 2014). This variation may be due in part to inconsistencies in measurement of traumatic childbirth and associated psychological distress, including varying time frames for assessment, utilization of non-validated measurement tools, and mixed samples that include high-risk pregnancies and childbirths. Many previous estimates were also obtained utilizing DSM-IV-TR diagnostic criteria, which is now outdated.

The experience of a traumatic event has the potential to trigger posttraumatic stress disorder (PTSD). Following traumatic childbirth, approximately 2% to 3% of women will

experience PTSD, with as many as one third of women experiencing subclinical symptomology (Creedy et al., 2000). PTSD is a psychiatric disorder diagnosed at least thirty days following a traumatic event, consisting of cognitive (e.g., intrusive negative thoughts or trauma memories), emotional (e.g., guilt, shame), behavioral (e.g., reckless behavior, irritability), and physiological (e.g., hyperarousal) symptoms that contribute to significant distress (APA, 2013). Not all women will experience a traumatic childbirth, and even fewer will go on to experience symptoms of PTSD. However, for the women who do experience these problems, distress can be detrimental to postpartum functioning. Women who experience long-term psychological problems following traumatic childbirth experiences report difficulties in mother-infant interaction and parenting problems, such as difficulty breastfeeding or bonding with the infant, who serves as a reminder of the trauma (Bailham & Joseph, 2003; Beck, 2004; 2011). Gaining further understanding of postpartum factors influencing the development and maintenance of PTSD may provide insight into potential prevention and treatment targets.

Negative social interactions occurring after a traumatic event may contribute to the maintenance of traumatic stress symptomology. There is societal pressure for women to reflect positively on their childbirth experience, and medical jargon of obstetric events (e.g., "incompetent cervix," and "failure to progress") puts blame on women for deviating from the typical childbirth progression (Hunter, 2006). This social pressure likely continues into the postpartum period. Research following other types of traumatic experiences supports that although social support following a traumatic experience can be a protective factor associated with decreased emotional distress, negative social responses to disclosure of a traumatic event (or communicating about the event with a social partner) deemed unsupportive are associated with more severe PTSD symptomology (Mindes, Ingram, Kliewer, & James, 2003; Ullman,

2000). Unsupportive responses to trauma disclosure may increase PTSD symptomology through increased use of maladaptive coping mechanisms, such as avoidance, and posttraumatic cognitions focused on self-blame and negative beliefs about the self and world (Relyea & Ullman, 2015; Woodward et al., 2015).

With the exception of some qualitative evidence, a review of the literature revealed no peer-reviewed research on social responses specifically to disclosure of traumatic childbirth experiences. The association between negative social interactions and PTSD symptomology has yet to be explored in this context. Given that as many as 84% of women appraise their childbirth as traumatic, and postpartum distress following traumatic childbirth interferes with maternal adjustment and mother-infant interactions, it is important to explore contributors to and maintenance factors of postpartum psychological distress.

The overall purpose of this mixed methodology study was to explore one aspect of the social context surrounding postpartum experiences following a traumatic childbirth: social responses to disclosure of traumatic childbirth experience. An objective of this study was to examine the possible associations between postpartum social interactions following disclosure of traumatic childbirth with maladaptive coping, posttraumatic cognitions, and depression and PTSD symptomology. By using both qualitative and quantitative data collection and analysis techniques, results addressed specific clinical scientific aims while taking into account the richness of personal experience and context.

This study's first specific aim was to explore disclosure of traumatic childbirth experiences by identifying the proportion of women who chose to disclose and how they disclosed (methods), who they disclosed to (targets), their reasons for disclosing and for not doing so, and relationships between disclosure and symptoms of postpartum depression and

childbirth-specific PTSD. The second specific aim was to explore social responses to traumatic childbirth disclosure by identifying common positive and negative social reactions. The third aim was to examine the relationship between unsupportive responses to traumatic childbirth disclosure and postpartum depression and childbirth-specific PTSD symptomology. Finally, the fourth specific aim was to test a model of psychological distress following traumatic childbirth disclosure in which maladaptive coping and posttraumatic cognitions act as mediators of the relationship between unsupportive responses to disclosure and psychological distress (i.e., childbirth-specific PTSD and postpartum depression symptoms; see Figure 1).

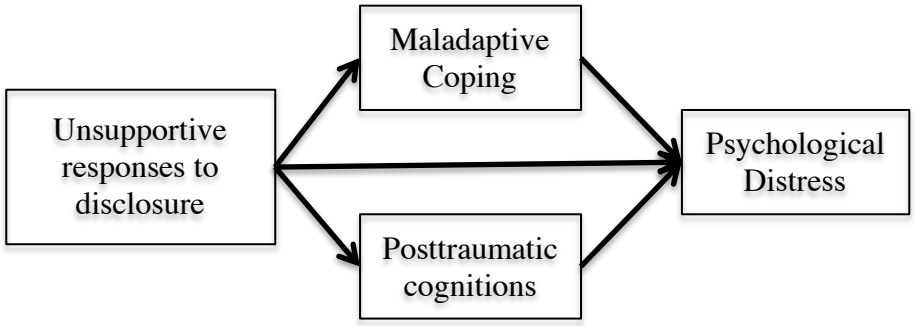

Figure 1. Proposed model of the mediating effects of maladaptive coping and posttraumatic cognitions on the relationship between unsupportive responses to disclosure of traumatic childbirth and symptoms of psychological distress (i.e., postpartum depression, childbirth-specific PTSD).

Traumatic Childbirth

According to the DSM-5 (APA, 2013), a traumatic event is one which involves an objective threat of death or serious injury. Exposure to the event can be through direct personal experience, witnessing it happening to another person, or learning of its occurrence happening to a loved one. The objective nature of this threat is evaluated based upon descriptive information provided by the person who experienced it, such as the nature of injury sustained. Potentially

traumatic events include, but are not limited to, sexual or physical assault or abuse, sudden and/or violent death of a loved one, and life-threatening accidents. Sudden and severe medical events such as anaphylactic shock can also meet classification as traumatic. In accordance with this definition, events occurring during childbirth that involve threat to the health of the mother, her child, or both individuals, can be characterized as traumatic.

The true prevalence of traumatic childbirth is somewhat uncertain. Many past reports do not formally assess the presence of an objective or perceived threat to life or of serious injury, but rather focus on symptom experience in the aftermath of difficult childbirths and presume the presence of a traumatic childbirth. Previous reports utilizing DSM-5 classification of traumatic events have estimated that between 27% and 84% of women subjectively appraise their childbirth as traumatic (Alcorn et al., 2010; Boorman et al., 2014). The proportion of women appraising their childbirth as traumatic is likely highest just after birth. Ford, Ayers, and Bradley (2010) asked women if their or their baby's life was in danger or if they or their baby were in danger of being seriously injured during childbirth. Nearly 32% of women responded positively to these questions at three weeks postpartum, with the percentage dropping to just below 17% at three months postpartum. Despite some previous investigation of subjective appraisal, no objective criteria specifically for traumatic childbirth have been established.

Contributors to traumatic childbirth appraisal. Numerous researchers have attempted to identify specific occurrences or characteristics that trigger the appraisal of childbirth as traumatic. There is some consensus on specific experiences that increase the likelihood of traumatic childbirth appraisal. However, some variability does exist.

Medical complications occurring in pregnancy and childbirth necessitating higher levels of obstetric intervention can trigger traumatic childbirth appraisal. Perinatal complications

including emergency Cesarean section (C-section), preeclampsia, and poor infant outcomes necessitating intensive care treatment have all demonstrated links with maternal perceptions of traumatic childbirth. Perinatal complications may contribute to the perceived and/or actual threat associated with the childbirth experience (Beck, 2004; Callahan & Hynan, 2002; Creedy et al., 2000; Soet, Brack, & Diloria, 2003; Stramrood et al., 2011). In the case of emergency C-section, one study found as many as one in three women who experienced an emergency C-section appraised their childbirth experience as traumatic. In this same study, having an emergency C-section increased the likelihood of traumatic childbirth appraisal by over five times that of women who had a vaginal birth (Boorman et al., 2014). Intense pain in labor and childbirth may also increase likelihood of traumatic childbirth appraisal (Creedy et al., 2000).

Additional psychosocial variables may put some women at risk to experience a traumatic childbirth. There is some evidence that primiparous mothers, or women who are giving birth for the first time, are at risk to appraise childbirth as traumatic. Boorman and colleagues (2014) reported that primiparous women were almost twice as likely as multiparous women, or women who have given birth at least once, to appraise childbirth as traumatic. However, other reports suggest no differences in traumatic childbirth in primiparous or multiparous women (Creedy et al., 2000). Having a history of traumatic experiences before childbirth also seems to increase the likelihood women will appraise childbirth as a traumatic event (Boorman et al., 2015; Soet et al., 2003). Finally, lower levels of social support during childbirth are associated with appraisal of childbirth as traumatic. Numerous studies have demonstrated that lack of support and poor communication of information from medical staff to the mother during the childbirth experience contributes to a traumatic childbirth appraisal (Beck, 2011; Czarnocka & Slade, 2000; Ford & Ayers, 2011; Soet et al., 2003). In a qualitative study of traumatic childbirth experiences by Beck

(2011), women reported feeling dehumanized due to being ignored by providers and providers discussing possible negative infant health outcomes openly and without explaining risk. Women also reported that following childbirth, they felt abandoned by medical staff, who did not seem to understand why the mother was experiencing emotional distress or appreciate the severity of that distress.

It is important to note that the level of severity of threat perceived by the mother during childbirth may not match that of medical providers (Beck, 2004; Brandon et al., 2011). Garthus-Niegel, von Soest, Vollrath, and Eberhard-Gran (2013) measured obstetric interventions/medical complications during childbirth and subjective experiences of fear, general impressions of birth, and the degree to which participants felt cared for during childbirth. Results from this study indicate that not only were subjective birth experiences the variable most strongly associated with posttraumatic stress symptoms, but they also partially mediated the relationship between obstetric characteristics of childbirth and posttraumatic stress symptoms. Furthermore, the subjective experiences elicited by the presence of the objective threat in childbirth may be better predictors of long-term posttraumatic stress symptoms. Subjective experiences that may contribute to traumatic childbirth appraisal are a feeling of lack of control during childbirth (Allen, 1998; Czarnock & Slade, 2000) and powerlessness (Czarnocka & Slade, 2000; Soet et al., 2003) accompanied by a perceived inability to speak up against inadequate care (Beck, 2011). Devilly, Gullo, Alcorn, and O'Donovan (2014) found that subjective experiences of helplessness and terror during childbirth accounted for a significant additional proportion of variance in a statistical model of postnatal PTSD that included appraisal of the childbirth as traumatic. As these subjective childbirth experiences demonstrate stronger relationships with PTSD symptomology than objective medical data, it is possible that these subjective experiences

contribute to lasting PTSD symptom experience while objective medical interventions contribute more to the initial appraisal of childbirth as a traumatic event.

Based on the available information in the literature, the strongest predictors of traumatic childbirth experiences remain unclear. While it is clear that personal experiences during birth including helplessness, lack of control, and feelings of fear are associated with increased likelihood to subjectively appraise childbirth as traumatic, medical events posing actual threat of death or serious injury also demonstrate significant associations. Furthermore, PTSD cannot be diagnosed using DSM-5 criteria without the presence of this actual threat. Therefore, the best predictors of traumatic childbirth experiences potentially leading to postpartum PTSD are likely a combination of objective medical events during childbirth coupled with a woman's subjective appraisal of the event as threatening.

Childbirth-Specific PTSD

For approximately 2 to 3% of women, a traumatic childbirth experience can lead to postnatal PTSD. The DSM-5 (APA, 2013) defines PTSD as distress or functional impairment occurring 30 days or more following the experience of a traumatic event. Although the percentage of women who meet full diagnostic criteria for PTSD following childbirth is low, as many as one third of women will experience subclinical PTSD symptomology after a childbirth subjectively appraised as traumatic (Creedy et al., 2000). Potential contributors to the development of childbirth-specific PTSD are similar to those of traumatic childbirth appraisal, including high levels of pain during childbirth, higher levels of obstetric intervention such as forceps delivery, and subjective experiences of feeling powerless or lacking control (Ballard, Stanley, & Brockington, 1995; Creedy et al., 2000; Czarnocka & Slade, 2000).

PTSD includes four types of symptoms: intrusion, avoidance, negative alterations in cognition and mood, and arousal and reactivity. Symptoms of intrusion include involuntary and distressing dreams, memories, or flashbacks related to the traumatic event. Symptoms of avoidance include purposeful avoidance of memories, thoughts, feelings, conversations, or reminders associated with the traumatic event. Symptoms of negative alterations in cognition and mood can include difficulty remembering aspects of the event, negative emotions including fear and guilt, social detachment, withdrawal from previously enjoyed activities, the inability to experience positive mood states, exaggerated negative beliefs about the self or others, and distorted thoughts of blame (self or others) for the traumatic event. Finally, symptoms of alterations in arousal and reactivity include irritability, angry outbursts, reckless behavior, hypervigilance or a heightened awareness of potential threats, an exaggerated startle response or hyper-reactivity in response to unexpected stimuli, and difficulties with sleep or concentration. In order for a clinical diagnosis to be made, the individual must experience at least one symptom each of intrusion and avoidance and two symptoms each of negative alterations in cognition or mood, and alterations in arousal or reactivity for at least one month following an objectively traumatic event. These symptoms must also cause significant distress or impairment in daily functioning.

In 2015, James reviewed nine studies on traumatic childbirth and PTSD with the intention of investigating similarities between childbirth-specific PTSD experiences and other types of trauma. Results suggested that women experience three general categories of distress: the trauma memory, negative appraisals, and strategies intended to control symptoms. Women often experienced symptoms of intrusion including re-experiencing their childbirth as if it were happening again, elevated emotional distress at cues associated with childbirth, negative

appraisals of the childbirth as violent or abusive accompanied by lasting negative thoughts and world views, and active avoidance of reminders of their childbirth experience. As these experiences map onto the symptom clusters of clinical PTSD, James concluded that postpartum PTSD presents similarly to PTSD following other types of traumatic experiences.

As not all women will go on to experience postpartum PTSD following a traumatic childbirth experience, there are likely individual differences that contribute to the development and maintenance of PTSD. Ayers (2004) applied a stress-diathesis framework to childbirth-specific PTSD in which individual characteristics leave women vulnerable to appraising childbirth as traumatic and having lasting difficulty resolving PTSD symptoms. These personal characteristics interact with events surrounding childbirth to lead to traumatic childbirth appraisal and, in some cases, long-term PTSD. In a recent review, Ayers, Bond, Bertullies, and Wijma (2016) sought to separate out these characteristics previously identified as contributors to childbirth-specific PTSD using a stress-diathesis framework. More specifically, they reviewed the literature with the intention of determining factors increasing vulnerability for postpartum PTSD, perinatal events contributing to PTSD development, and postpartum factors associated with PTSD maintenance. Vulnerability factors included depression in pregnancy, prenatal fear of childbirth, history of trauma, and health complications during pregnancy. Perinatal events included negative emotions during the childbirth, a perceived lack of control and support during childbirth, and maladaptive coping by dissociation during childbirth. Finally, postpartum factors included postpartum depression, maladaptive coping strategies, and high levels of stress.

Although largely fitting the general clinical criteria for PTSD, women with childbirth-specific PTSD report unique experiences as well. A growing literature base has used qualitative methodology to identify these distinct experiences of mothers coping with childbirth-specific

PTSD, with the intention of describing their detrimental effects on maternal well-being. In a meta-ethnography by Beck (2011), three overarching themes of PTSD symptomology following traumatic childbirth were identified. First, women reported feeling exposed and vulnerable, as if their self-protection had been forcibly stripped during childbirth. Women also reported feeling as if they were suffering from invisible wounds, as if others were unaware or negligent of both their short and long-term emotional distress. Finally, women emphasized the negative repercussions that contributed to poor mother-infant interaction in the postnatal period.

Effects on motherhood. Childbirth-specific PTSD is not only detrimental to the well-being of the mother, but can also influence parenting practices that affect infant health and development. Symptoms falling under each of the four PTSD symptom clusters can contribute to difficulties interacting with the infant and withdrawal from typical activities of motherhood (Bailham & Joseph, 2003). These behaviors stemming from PTSD symptomology likely interfere with maternal adjustment to motherhood, and poor adjustment to motherhood likely cycles back to exacerbate or prolong PTSD symptomology.

Specific PTSD symptomology may contribute to mother-infant attachment problems. In an early review of research exploring the effects of postnatal PTSD, Bailham and Joseph (2003) speculate that mother-infant attachment and bonding difficulties may be directly connected with the PTSD symptom of avoidance. As avoidance of environmental and emotional triggers is a hallmark feature of PTSD, it stands to reason that a woman may physically and/or emotionally avoid her child, if her child serves as a reminder of her traumatic childbirth. Additional qualitative evidence supports Bailham and Joseph's conclusion. Beck (2011) and Nicholls and Ayers (2007) conducted separate qualitative studies investigating the nature of childbirth-specific PTSD in the postpartum period. In both investigations, women reported purposeful and direct

avoidance of participating in activities requiring interaction with their baby, including breastfeeding and holding, for specific fear of being reminded of childbirth. One woman in a qualitative study by Taghizadeh, Iraipour, and Arbabi (2013) described feelings of dislike for her child: “when she was inside my belly, I liked her but this feeling went away once I gave birth to her” (p. 4).

Reminders of a traumatic childbirth experience can trigger increased severity of symptoms for years after childbirth. Beck (2006) collected stories of women’s experiences of their child’s birthdays following traumatic childbirth, which she referred to as “the anniversary of birth trauma” (p. 381). Overall, women reported experiencing distressing thoughts and feelings for days or weeks leading up to the anniversary of their traumatic childbirth, contributing to avoidance of celebrating their child’s birthday. Some women reported socioemotional distress focused on other people, including increased feelings of anger toward the medical staff present during childbirth and toward family and friends who did not acknowledge that the child’s birthday was also the anniversary of the mother’s traumatic experience.

Childbirth-specific PTSD may also influence future parenting and birthing decisions. Bailham and Joseph’s review describes a general fear of future pregnancy and childbirth (2003). Women may choose to avoid subsequent pregnancy for fear of traumatic childbirth and/or the lasting effects of childbirth-specific PTSD (Beck, 2006). One qualitative study also described a tendency for women to electively choose C-section birth following a traumatic vaginal birth, with hopes of decreasing risk for obstetric intervention (Bailham & Joseph, 2003; Taghizadeh et al., 2013).

As postpartum depression and maladaptive coping have been identified as postnatal factors increasing severity of PTSD symptomology, it is clear that experiencing a traumatic

childbirth continues to affect maternal functioning through the postpartum period. Emotional distress and thoughts and behaviors aimed at coping with distress likely interfere with parenting. In turn, mothers experiencing postnatal PTSD may identify aspects of parenting as PTSD triggers. In qualitative studies of the postpartum effects of traumatic childbirth, some women identify the act of breastfeeding, emotional experiences with their baby, and even their baby themselves as triggers for increased severity of PTSD symptoms (Beck, 2011). For others, maternal-infant interactive acts such as breastfeeding and subsequent pregnancy can serve to decrease PTSD symptomology (Beck, 2011). As positive maternal-infant interaction is an important developmental experience in infancy and mother-infant behaviors are not consistently exacerbating or healing of PTSD, better understanding the specific maintenance factors of PTSD is important to predict symptom trajectory and mitigate negative effects to maternal-child health.

Maintenance factors of postnatal PTSD. The trajectory of PTSD symptomology following childbirth is not consistent across available research. For some women, postnatal PTSD symptom experience improves over time while others report little change (Beck, 2006). As such, there are likely individual qualities and experiences that contribute to trajectory differences.

Ehlers and Clark's (2000) cognitive model of PTSD proposes that PTSD develops and is maintained by continued appraisals of the traumatic event as currently threatening. Although the actual, objective threat accompanying the event has passed, individual differences such as prior traumatic experiences and coping style can lead some individuals to assess the trauma memory and associated emotional responses as dangerous and damaging. This appraisal of current, serious threat occurs in the form of posttraumatic cognitions, which may be external and focused on views of society (e.g., the world is a dangerous place) or internally-focused (e.g., I am not the

person I thought I was). When the trauma memory is activated through exposure to reminders of the event, the individual perceives this heightened sense of current, serious threat, leading to the experience of further negative, trauma-focused cognitions and PTSD symptomology. Symptomology itself can then heighten the perception of current threat, leading to a feedback loop of symptom exacerbation.

Support for this cognitive model of PTSD maintenance has been demonstrated in various medical populations. Ayers, Copland, and Dunmore (2009) investigated a cognitive model of PTSD in a sample of heart attack survivors three months or more after their heart attack. Even when controlling for prior psychiatric problems of anxiety and depression, prior trauma exposure, and perceived medical severity of their heart attack, negative appraisals of the consequences of the heart attack (e.g., that negative emotions following heart attack mean the person cannot cope or is going crazy) and dysfunctional coping styles were associated with severity of PTSD symptoms. However, results garnered only partial support for Ehlers and Clark's model, as negative appraisals of PTSD symptomology were not associated with severity of symptoms. Cognitive factors have also demonstrated significant correlations with severity of PTSD symptoms in individuals up to two years after spinal cord injury (Agar, Kennedy, & King, 2006) and three months after stroke (Field, Norman, & Barton, 2008).

Foa, Ehlers, Clark, Tolin, and Orsillo (1999) developed the Post-Traumatic Cognitions Inventory (PTCI) to assess negative trauma-related cognitions following a traumatic event. Researchers described three general themes of trauma-focused cognitions that contribute to PTSD: negative cognitions about the self, negative beliefs about the world, and self-blame. Negative cognitions about the self can refer to thoughts about changes to the self and/or personal reactions to trauma triggers. Thoughts about changes to the self refer to beliefs that one has

experienced permanent, negative changes resulting from the trauma (e.g., I am weak). Thoughts regarding personal reactions to trauma triggers include beliefs that trauma symptoms and emotional reactions to trauma triggers are frightening, threatening, and indicative of severe pathology (e.g., I can't deal with even the slightest upset). Negative beliefs about the world include global beliefs that the world is unsafe and negative beliefs about other people (e.g., others cannot be relied on). Finally, self-blame cognitions are focused on identifying the self as the cause of the traumatic event or lasting symptoms. In studies of patients following spinal cord injury or stroke, results similarly identified negative cognitions about the self and world as significant contributors to PTSD symptom severity. In both studies, self-blame cognitions were not associated with PTSD (Agar et al., 2006; Field et al., 2008).

Although this cognitive model of PTSD has support in other medical populations, traumatic childbirths have substantial differences from heart attack, stroke, and spinal cord injury. Most notably, childbirth is an expected event that women anticipate and for which they prepare (e.g., childbirth classes, hospital tours, birth planning, and prenatal care) for the duration of pregnancy. Secondly, individuals who experience heart attack, stroke, and spinal cord injury are likely to experience lasting physical and health problems, while there are not frequently health problems or lasting disability for mother or child following childbirth. Although data on rates of maternal disability following childbirth have not been routinely collected in the United States, estimates of maternal hospitalizations directly resulting from childbirth complications or exacerbations of preexisting illness directly due to childbirth are about 163 per 10,000 births, or less than 2% (Creanga et al., 2014). A third difference between other types of medical traumas investigated and childbirth is that while most medical traumas affect the physical and emotional well-being of only one individual, childbirth is accompanied by risks for both mother and child.

Despite these differences, support for a cognitive model of postpartum PTSD does exist. Engelhard and colleagues (2002) found that negative posttraumatic cognitions measured with the PCTI were significantly associated with severity of posttraumatic stress symptoms following pre-eclampsia. Ford and colleagues (2010) investigated a cognitive model of PTSD in the same group of women three weeks and three months postpartum and found the relationship between traumatic childbirth events and the severity of posttraumatic stress symptoms was partially mediated by posttraumatic cognitions at both time points. Furthermore, the strength of the effect of the subjective birth experience such as emotional distress, helplessness, and lack of control during birth on PTSD symptoms seems to decrease over time, suggesting that postpartum events are likely maintaining distress over time (Ayers et al., 2016; Ford et al., 2010). Therefore, additional potential mediators and/or moderators contributing to postpartum PTSD should be explored.

Coping with PTSD. According to Ehlers and Clark's (2001) model, individuals either resolve or maintain negative trauma appraisals or cognitions through behaviors aimed at reducing the sense of current threat. These coping efforts are either adaptive or maladaptive. While adaptive coping efforts can facilitate resolution of trauma appraisals and contribute to decreased symptom severity, maladaptive strategies maintain the sense of current threat and are associated with worse PTSD symptomology (Snyders & Pulvers, 2001).

Coping strategies are conscious, effortful cognitions or behaviors in which an individual engages in response to a stressor with the intention of mitigating negative effects of that stressor (Snyder & Pulvers, 2001). Lazarus and Folkman (1984) identified two stages of stressor appraisal that precede coping in their "theory of cognitive appraisal." In primary appraisal, the individual evaluates the importance of the stressor and potential harm the stressor may cause. In

secondary appraisal, the individual evaluates their personal resources for coping with the stressor. The stressor is appraised as a threat if the individual deems it important to their well-being and believes they do not have the necessary tools to adequately cope. Snyder and Pulvers (2001) described coping responses following different outcomes of primary and secondary appraisal. If individuals appraise the stressor as important and threatening and believe they have little resources to cope, they will likely engage in maladaptive coping. In contrast, if the stressor is deemed important and threatening, but the individual believes they have enough resources to cope with the stressor's demands, they will engage in adaptive coping. Finally, individuals engage in little coping effort in response to unimportant and non-threatening events.

Snyder and Pulvers' (2001) model of coping further describes two general types of coping styles following trauma: approach and avoidance. Approach coping is considered an adaptive coping strategy. When an individual engages in approach coping, they view their emotional, behavioral, and cognitive responses to the trauma as tools that can help them process the trauma. In contrast, avoidance coping follows the primary appraisal that the event is important and the secondary appraisal that the individual does not have the personal resources to adequately cope. As such, they avoid the stressor and its reminders. Avoidant coping is considered maladaptive, as they prevent resolution of negative trauma appraisals and therefore interfere with positive change in reactions to the trauma memory. Avoidant coping strategies actually increase frequency of negative thoughts of the self and world related to the trauma, and the personal negative emotional reactions to reminders of the trauma.

Prior research supports that the use of maladaptive coping strategies is correlated with high PTSD symptoms (Ayers et al., 2009; Shaw, Bernard, Storfer-Isser, Rhine, & Horowitz, 2013). As PTSD symptoms include a cluster of avoidance behaviors, Ayers and colleagues

(2009) controlled for the avoidance symptom cluster of PTSD in a linear regression predicting total PTSD symptom severity from maladaptive coping efforts. Their results suggest that engaging in these maladaptive coping strategies is related to high PTSD even beyond that explained by avoidant PTSD symptoms. The interference of maladaptive coping with PTSD also has support in the postpartum literature. First, Ford and colleagues (2010) found that poor coping self-efficacy, or the belief that one would not be able to adequately cope with trauma, was significantly related to PTSD symptom severity in a sample of women three weeks and three months postpartum. In a study of maternal PTSD following infant discharge from the neonatal intensive care unit (NICU), Shaw and colleagues (2013) found that while the use of adaptive coping strategies was not associated with PTSD severity, more frequently engaging in maladaptive coping was associated with higher risk for PTSD and greater symptom severity one month after the infant's hospital discharge.

Although coping does seem to account for a portion of the variance in PTSD symptom severity, factors that influence the type of coping strategies in which the individual engages following trauma are not well understood. Ehlers and Clark (2001) posit that responses from social partners related to the trauma are a factor that can influence the type of coping strategies in which the individual chooses to engage. In turn, coping can influence symptom experience.

Trauma Disclosure

Disclosure of traumatic experiences, or the act of communicating about the traumatic experience with another person, can have a positive influence on well-being following the experience of traumatic event. Rates of disclosure vary by type of trauma and across samples, with rates of sexual assault disclosure varying from 77 to 87% (Littleton, 2010; Ullman & Filipas, 2001). Childhood sexual assault has one of the lowest rates of trauma disclosure at 66 to

72% (Ruggerio et al., 2004; Ullman, Townsend, Filipas, &Starzynski, 2007). Discussing the negative experience with social partners can help a traumatized individual process their experience by organizing their memories of the event to better facilitate support and coping (Chaudoir & Fisher, 2010; Tedeschi & Calhoun, 2004). Support for the beneficial effects of disclosure on well-being can be found in studies demonstrating that disclosure promotes posttraumatic growth and is associated with lower PTSD symptoms (Currier, Lisman, Harris, Tait, & Erbes, 2012; Pietruch & Jobson, 2012; Ullman, 2003). However, other research has demonstrated little benefit of disclosure on PTSD symptom severity (Bedard-Gilligan, Jaeger, Echiverri-Cohen, & Zoellner, 2012). As such, it may be that the relationship between disclosure and PTSD is influenced by additional factors, such as detail provided in the disclosure, desire or reluctance to disclose, and social interactions during disclosure (Ingram, Betz, Mindes, Schmitt, & Smith, 2001; Mueller, Moergeli, & Maercker, 2008; Ullman, 2000).

Individuals with PTSD tend to disclose traumatic experiences less often than those who experience a traumatic event with lower PTSD symptomology (Bedard-Gilligan et al., 2012). This pattern of disclosure in relation to PTSD could be due to the tendency of individuals with high levels of PTSD symptomology to avoid discussing their traumatic experiences with others, which may be a behavioral strategy to avoid reminders of the traumatic experience (Dekel & Monson, 2010). In addition, when disclosing a traumatic experience, the individual is at risk to receive an unfavorable reaction from the other person and potentially experience a rupture in their preexisting relationship (Chaudoir & Fisher, 2010). Muller, Beauducel, Raschka, and Maercker (2000) developed a measure of individual attitudes towards disclosure of traumatic experiences, the Disclosure of Trauma Questionnaire (DTQ), which evaluates three facets of disclosure: reluctance to talk, urge to talk, and emotional reactions during disclosure. Their

research and others consistently shows that a reluctance to discuss the traumatic event is positively associated with PTSD symptom severity (Mueller et al., 2008; Pietruch & Johnson, 2012). The directionality of the relationship between reluctance to disclose and PTSD symptom severity is unknown. High PTSD symptoms may be driving reluctance, or reluctance may be leading to increased symptom severity. In a study of victims of violent crime, Mueller and colleagues (2008) demonstrated that in addition to a significant positive relationship between PTSD symptomology and reluctance to disclose, the urge to disclose was also positively associated with PTSD symptom severity. Therefore, it seems that individuals with the most severe PTSD feel the greatest need to discuss their traumatic experience while simultaneously experiencing greater hesitance to disclose. It is possible that aspects of the social disclosure experience, such as the social partner and their anticipated or actual reactions to the disclosure, might increase reluctance to disclose despite a perceived need to do so.

Social Responses to Trauma Disclosure

The relationship between an individual's social network and trauma disclosure is multi-faceted. The individual's social support network can buffer against the negative effects of trauma on well-being, but some types of support may be more beneficial than others (Relyea & Ullman, 2015). Specifically, support that is specific to the particular stressor and emotional support that is coupled with practical aid may be most beneficial to well-being (Chaudoir & Fisher, 2010). Ford and colleagues (2010) demonstrated that a measure of perceived general social support accounted for a significant proportion of the variance in PTSD symptom severity at three months postpartum in a sample of women with PTSD following traumatic childbirth, such that lower support was related to greater PTSD symptom severity. Similarly, in a study examining PTSD following stillbirth, Turton, Hughes, Evans, and Fainman (2001) demonstrated that either

uncertain or insufficient social support was related to increased severity of PTSD symptoms. Therefore, adequate social support following a traumatic event may be a protective factor for women at risk for developing PTSD following negative childbirth experiences.

Although the literature supports the positive effects of a supportive social network on well-being following a traumatic experience, several investigations have found no association between the amount or quality of general social support (e.g., number of social partners, frequency of social contact) and PTSD symptom severity (Ford et al., 2010; Ullman & Filipas, 2001). Therefore, the buffering effects from the social network may not be based on the simple presence of social partners, but the quality of trauma-specific social interactions.

No information exists as to the potential benefits of support directly in response to disclosure of a traumatic childbirth experience. However, evidence of the benefits of positive social responses to disclosure can be found in the sexual assault literature. Ullman (2000) developed the Social Reactions Questionnaire (SRQ) to evaluate the types of responses women received from social partners when disclosing a sexual assault experience. The SRQ measures both negative and positive social reactions, with the two positive social reactions subscales assessing: 1) providing emotional support (i.e., expression of empathy, caring and concern; provides comfort, reassurance of value, belongingness, being loved) and esteem support (i.e., expression of positive regard for the person, encouragement or agreement with ideas/feelings, positive comparison); and 2) tangible support (i.e., direct assistance such as giving a ride or lending money) and informational support (i.e., giving advice, directions, suggestions, feedback about how person is doing). Some evidence suggests that positive social responses to disclosure may provide a similar buffer against distress as perceived social support, as the positive SRQ subscales have been significantly associated with lower PTSD symptom severity (Campbell,

Dworkin, & Cabral, 2009). However, positive social reactions to disclosure have not demonstrated consistent protective effects (Ullman, 2010). For example, Ullman and Peter-Hagene (2016) found that positive reactions to disclosure of sexual assault were not associated with PTSD symptomology. The relationship between social reactions and PTSD symptomology is not likely to be unidirectional or linear, as more severe PTSD may elicit negative reactions from social partners (Ullman & Peter-Hagene, 2016). An additional factor to consider is the trauma survivor's perception of support. The support provided by social partners is not always perceived by the individual as positive, regardless of the social partner's intent, and individuals who disclose likely experience a mix of negative and positive reactions rather than one or the other (Relyea & Ullman, 2015; Ullman, 2010).

Unsupportive social reactions to disclosure. Social interactions can be perceived by the individual who experienced the trauma as positive or negative, independent of the actual intentions of the social partner (Wortman & Lehman, 1985). There is a growing literature base regarding perceived responses of social partners to disclosure of sexual assault. Most women perceive more positive reactions to disclosure compared with negative, but the majority of women perceive a mixture of both positive and negative reactions (Ullman & Filipas, 2001; Reylea & Ullman, 2015). Wortman and Lehman (1985) identified three reasons why social partners may respond in an unsupportive manner. First, they may feel fearful of the person or the event, leading to a sense of vulnerability and helplessness. Second, they may be unsure of what types of support would be helpful in that circumstance. Finally, unsupportive social interactions may be reflective of misconceptions of the stressor or the adjustment process following a traumatic event.

Unsupportive social responses to disclosure of a traumatic event can take various forms. Common unsupportive reactions include blaming the individual for the experience, socially withdrawing from the individual or discouraging conversation, and providing unwanted aid that leads the individual to feel as if they are inadequate in some way (Ingram et al., 2001; Ullman, 2000). Ingram and colleagues (2001) developed the Unsupportive Social Interactions Inventory (USII) to assess unsupportive social interactions specific to disclosure of a particular life stressor. Each item within this scale assesses the degree to which the individual experiences specific behaviors from a social partner. Researchers identified four types of unsupportive social interactions. Distancing refers to emotional or physical disengagement from the social partner. Bumbling refers to awkward or uncomfortable behaviors, or behaviors that were intrusive and inappropriately focused on attempts to problem-solve the stressful event or adjustment difficulties. Minimizing behaviors are attempts to force positive reactions from the individual or to downplay the severity or importance of the individual's concerns. Finally, blaming behaviors are those focused on finding fault for the stressful event or criticizing aspects of the event.

Unsupportive social responses to disclosure can increase distress and interfere with psychological adjustment following the occurrence of a major health stressor. In a sample of women coping with infertility, unsupportive social responses to disclosure as measured by the USII were significantly related to higher depression scores (Mindes et al., 2003). Similar results have been found following disclosure of abortion (Major et al., 1990), rheumatoid arthritis (Revenson, Schiaffina, Majerovitz, & Allan, 1991), HIV status (Song & Ingram, 2002), and cancer diagnosis (Manne & Glassman, 2000).

Coping as a potential mediator. A mechanism through which social responses to disclosure may influence distress is coping strategies. As previously discussed, more frequent

use of maladaptive coping in response to trauma has been repeatedly linked with increased PTSD symptom severity. Social reactions to disclosure are also associated with the use of coping strategies. Negative social reactions to disclosure of sexual assault (Littleton, 2010; Relyea & Ullman, 2015), cancer diagnosis (Manne & Glassman, 2000), and infertility (Mindes et al., 2003) have been positively associated with use of maladaptive coping, such as purposefully limiting discussion of the trauma. Maladaptive coping may be a mediator through which negative social reactions to disclosure increase emotional distress, with supporting evidence for mediation found following sexual assault (Ullman et al., 2007) and cancer diagnosis (Manne & Glassman, 2000). In contrast, positive social reactions to sexual assault disclosure are significantly correlated with use of adaptive coping (Sullivan, Schroeder, Dudley, & Dixon, 2010; Relyea & Ullman, 2015). Unsupportive social responses to disclosure may cause the individual to experience a surge of negative emotions including anger, frustration, and disappointment. This emotional distress leaves the individual feeling as if they do not have adequate support, leading them to withdraw from the social network due to the perception of social constraint, which contributes to engagement with avoidance coping (Lepore, Silver, Wortman, & Wayment, 1996; Lepore & Helgeson, 1998). The use of maladaptive coping strategies would then contribute to greater emotional distress in the form of PTSD symptomology.

Cognitions as a potential mediator. In addition to potentially contributing to greater use of maladaptive coping, negative social responses to trauma disclosure may also lead to increased frequency or severity of posttraumatic cognitions. Experiencing unsupportive social responses to disclosure of a trauma may lead the individual to appraise the trauma as more threatening in the present moment (Vaux, 1988). Posttraumatic cognitions have received limited attention in the literature with respect to negative social responses to disclosure. However,

Mindes and colleagues (2003) did examine threat appraisals in a sample of women coping with infertility. Researchers defined threat appraisals as the extent to which problems with fertility could threaten life goals, reflecting beliefs of the seriousness and current nature of the threat, which likely contribute to posttraumatic cognitions. Results showed that threat appraisals mediated the relationship between unsupportive social interactions and PTSD symptoms. Along similar lines, Ullman and Peter-Hagene (2014) identified perceived control over trauma recovery as a mediator of the relationship between negative social reactions to sexual assault disclosure and PTSD symptom severity. Finally, Woodward and colleagues (2015) identified posttraumatic cognitions as a mediator of the relationship between social support and PTSD symptoms in separate samples of interpersonal violence and motor vehicle accident survivors. Taken together, this information suggests that there is likely a relationship between unsupportive social responses to trauma disclosure and posttraumatic cognitions focused on the severity of the posttraumatic threat and personal ability to cope and recover. Furthermore, these posttraumatic cognitions may act as a mechanism through which negative social responses to disclosure increase PTSD symptom severity.

Social Responses to Disclosure of Traumatic Childbirth

Negative social responses to disclosure of a traumatic experience can be forms of silencing. Silencing of trauma refers to attempts to suppress acknowledgement or discussion of particular experiences or occurrences within society (DeVault, 1999). DeVault (1999) describes silencing as the stifling or censorship of speaking or writing about an experience that is aimed at excluding the experience from society through discounting the experience. Little information exists as to the silencing effects of negative social responses to traumatic childbirth itself or to traumatic childbirth disclosure.

The medicalization of childbirth has been viewed by some as a means of silencing the intimacy of a woman's childbirth experience. Although there are numerous benefits to perinatal safety and mother-infant mortality and morbidity, this medicalization has contributed to a societal view of childbirth as a biological event that is separate from social influence (Cosgrove, 2004). As Garcia, Kirkpatrick, and Richards (1990) note, the woman's body becomes the "birth machine." This view may be particularly salient when the childbirth experience is atypical or negative, and it is reasonable to assume this separation continues into the postpartum period. Hunter (2006) calls attention to obstetric jargon seemingly supporting the idea of the "birth machine," with terms such as "failure to progress" and "incompetent cervix" describing the breakdown and inadequacy of the woman's body as the biological machine naturally designed to birth a child. As such, women may feel as if they have no control over childbirth and as if they are an object rather than an emotionally vulnerable human being (Hazen, 2006). There is also a pressure to perform during childbirth that is applied by the social environment, which likely continues into the postpartum period as pressure to perform adequately as a mother.

When a mother experiences lasting postpartum distress stemming from a negative childbirth experience, negative social responses can serve to continue this sense of suppression, objectification, and isolation. As Beck (2004) states, "It's like an invisible wall around the sufferer" (p. 221). Qualitative analyses of mothers' social experiences related to negative childbirth experiences frequently cite the general view that newborn safety is the primary concern during childbirth, and maternal sacrifices and negative obstetric experiences during birth are justified as long as the infant is safe and healthy (Beck, 2004; 2006). In a study of perinatal loss, Hazen (2003; 2006) reported that attempts made by women to discuss their miscarriage or fetal loss were often met with unsupportive remarks emphasizing the difficulties of having a

newborn or the possibility of future pregnancy. Furthermore, women also reported receiving encouragement to discuss their perinatal loss in only socially-appropriate settings, such as private counseling or dedicated support groups (Hazen, 2006).

The little qualitative evidence currently available on social responses to negative childbirth experiences has similarities to unsupportive and negative social reactions measured in the medical and sexual assault literature. The medical jargon emphasizing the failure of the woman's body to adequately birth a child resembles blaming behaviors measured by the USII and common in response to sexual assault disclosure (Ingram et al., 2001; Ullman, 2000). Similarly, women report feeling as if their voices are suppressed and they are pushed to social isolation, or as if their experiences are less important than the health of their infant. As these behaviors are associated with more severe emotional distress in the form of depression or PTSD symptomology following sexual assault and other health experiences, it is likely that women may have similar experiences following traumatic childbirth.

The Current Study

With the exception of some qualitative reports, no prior research has explored disclosure of traumatic childbirth or the types of responses women receive from social partners when they disclose. Furthermore, the associations between disclosure, social responses to disclosure, and wellbeing are entirely unknown in the context of traumatic childbirth. Therefore, the purpose of the current study was to explore disclosure following a traumatic childbirth experience including the responses women receive from social partners following disclosure and how these experiences may be associated with maladaptive coping, traumatic cognitions, and depressive and PTSD symptomology. First, I identified women who have had a traumatic childbirth experience in the past year based on their subjective experience of the childbirth as traumatic and

further analysis of their reported objective obstetric events surrounding childbirth. Women who reported a perceived threat of death or injury to themselves and/or their baby during childbirth and who experienced obstetric medical events that pose an objective threat of death and/or injury to the women and/or their baby were included in analyses.

Specific aim 1. This study's first specific aim was to explore disclosure of traumatic childbirth and its relationship to postpartum depression and childbirth-specific PTSD. The proportion of women who disclosed was identified, and this disclosure rate was compared with rates of disclosure of other types of trauma. Disclosure methods, targets, and extent were also explored. Reasons participants disclosed and reasons participants chose not to disclose were derived from participants' qualitative responses. Finally, the relationship between disclosure and postpartum depression and PTSD symptomology was examined.

Hypothesis 1. Participants who disclosed traumatic childbirth will have significantly lower postpartum depression symptomology than women who did not disclose.

Hypothesis 2. Participants who disclosed traumatic childbirth will have significantly lower childbirth-specific PTSD symptomology than women who did not disclose.

Specific aim 2. The second specific aim was to explore social responses to traumatic childbirth disclosure. This descriptive aim examined the types of positive/supportive and negative/unsupportive social responses women received in response to traumatic childbirth disclosure. Types of positive social reactions to disclosure were described based on disclosing participants' responses to the Social Reactions Questionnaire (SRQ) positive reaction subscales of Emotional Support/Belief and Tangible Aid/Informational Support. Other types of positive and supportive social responses to childbirth were derived from participants' qualitative responses. Types of negative social reactions to disclosure were described based on disclosing

participants' responses to the Unsupportive Social Interactions Inventory (USII) subscales of Distancing, Bumbling, Minimizing, and Blaming, and items drawn from the SRQ negative reaction subscales of Treat Differently, Take Control, Egocentric, and Distraction. Other types of negative/unsupportive reactions to disclosure were derived from participants' qualitative responses.

Specific aim 3. The third specific aim was to examine relationships among negative social responses to disclosure of traumatic childbirth and postpartum depression and childbirth-specific PTSD. Prior trauma history was statistically controlled for in these analyses, as history of trauma exposure may influence depression and PTSD symptomology. Demographic, pregnancy, and childbirth characteristics that demonstrated significant relationships with symptoms of depression and/or PTSD were also statistically controlled for.

Hypothesis 3. Unsupportive responses to traumatic childbirth disclosure will be significantly positively related to postpartum depression symptoms in women who disclosed.

Hypothesis 4. Unsupportive responses to traumatic childbirth disclosure will be significantly positively related to childbirth-specific PTSD in women who disclosed.

Specific aim 4. The final specific aim was to test a model of trauma coping following traumatic childbirth disclosure shown in in Figure 1. In this model, maladaptive coping or posttraumatic cognitions were evaluated as a mediator of the relationship between negative responses to disclosure and depression or childbirth-specific PTSD symptoms while accounting for prior trauma exposure. Prior trauma, positive/supportive social responses to disclosure, and demographic, pregnancy, and childbirth characteristics that demonstrated significant relationships with symptoms of depression and/or PTSD symptoms were also statistically controlled for.

Hypothesis 5. Unsupportive responses to traumatic childbirth disclosure will be significantly, positively related to maladaptive coping.

Hypothesis 6. Unsupportive responses to traumatic childbirth disclosure will be significantly, positively related to posttraumatic cognitions.

Hypothesis 7. Maladaptive coping with traumatic childbirth will be significantly, positively related to postpartum depression symptomology.

Hypothesis 8. Maladaptive coping will be significantly, positively related to childbirth-specific PTSD symptomology.

Hypothesis 9. Posttraumatic cognitions will be significantly, positively related to postpartum depression symptomology.

Hypothesis 10. Posttraumatic cognitions will be significantly, positively related to childbirth-specific PTSD.

Hypothesis 11. Maladaptive coping will mediate the relationship between unsupportive responses to traumatic childbirth disclosure and postpartum depression symptomology.

Hypothesis 12. Maladaptive coping will mediate the relationship between unsupportive responses to traumatic childbirth disclosure and childbirth-specific PTSD symptomology.

Hypothesis 13. Posttraumatic cognitions will mediate the relationship between unsupportive responses to traumatic childbirth disclosure and postpartum depression symptomology.

Hypothesis 14. Posttraumatic cognitions will mediate the relationship between unsupportive responses to traumatic childbirth disclosure and childbirth-specific PTSD symptomology.

CHAPTER II: METHODS

Participants

Inclusion criteria were: 1) having experienced a traumatic childbirth between 30 days and one year prior to study participation, 2) having a living child resulting from the identified traumatic childbirth experience, 3) being at least 18-years-old, 4) living in the United States, and 5) able to complete an online survey in English. The timeframe of one year was selected in order to allow time for participants to discuss their childbirth experience with social partners. In order to avoid confounding emotional experiences related to complicated or traumatic grief, women were eligible only if the child resulting from the traumatic childbirth experience was living at the time of participation. They were excluded if they experienced a neonatal loss or miscarriage in the time since their difficult childbirth. Participation was limited to the United States to account for differences in childbirth practices, national medical and health insurance policy, and cultural values. There is also some evidence that suggests there may be differences in the predictors of traumatic childbirth between high and low-income countries due to differences in mother-infant morbidity and mortality (Ayers et al., 2016).

Recruitment

Women were recruited from Internet-based social media groups for mothers for participation in an online survey. Beck (2005) discussed the benefits of including an Internet sample in qualitative research on trauma related to negative childbirth experiences. Benefits to the researcher include cost effectiveness, as facilities and resources do not need to be utilized to schedule interviews, and ease of data analysis, as transcription of interviews is not necessary. Additional benefits include the ability to reach women who may be reluctant to discuss their experiences in person, being able to reach women in most geographic locations, and decreased

likelihood of social desirability bias that can arise in face-to-face interviews. Although there are multiple benefits of Internet sampling, participants in these samples do not tend to be demographically diverse, with most participants having moderate-to-high socioeconomic status (Hamilton & Browers, 2006). In order to collect data from a more diverse sample, I intended to expand recruitment to community-based obstetric and pediatric clinics. Unfortunately, attempts to secure grant funding to support community recruitment were unsuccessful. Thus, this sample was recruited exclusively from social media.

Procedure

The East Carolina University Institutional Review Board approved this study, and the initial approval letter can be found in Appendix A. Participants completed a single online survey from a computer when they were able. Women were made aware about the study from online advertisements. They self-identified as interested and eligible for the study by accessing the survey through Qualtrics. The study survey can be found in Appendix B. After reviewing a brief description of the study, eligibility requirements, and estimated length of study participation, women who indicated interest in participation were presented with an online consent form further detailing the study's purpose, requirements, and costs and benefits of participation. They were then given the option to complete the survey or exit, and only those who indicated their continued interest in participation were advanced to the survey. Those who chose to exit the study were thanked for their time and consideration. There were no incentives offered for study participation.

Women who advanced to the survey were asked several questions to determine study eligibility. They were asked to select their current age from a dropdown list and indicate if they were currently living in the United States. They were asked to indicate if they experienced a

negative, unpleasant, and/or difficult childbirth. They were asked to identify the age in weeks of their child resulting from the negative childbirth experience and if their child was living. Individuals who identified as younger than 18 years, were not living in the United States, whose child was not living, or not within the eligible time range since the birth (between 30 days and one year), and/or did not experience a negative childbirth were progressed to a page thanking them for participation and exited from the study.

Measures

Demographics and background information. The first component of the survey assessed participant demographics and background information. This information included: race, ethnicity, marital status, highest level of education, employment status, and type of health insurance.

Pregnancy and childbirth history was also assessed. Participants were first asked to report gravidity and parity, if they had a history of miscarriage or fetal loss prior to their difficult childbirth, and if they were currently pregnant. They were then asked to report information regarding their negative childbirth including the following: singleton or multiple pregnancy, child's birthdate, gestational age at birth, birth weight, the mode of delivery (i.e., vaginal, instrumental vaginal, planned C-section, unplanned or emergency C-section), analgesics used (i.e., none, epidural, intravenous, general, local, other), and social support present in the delivery room besides doctors and nurses (i.e., partner, parent, friend, doula, midwife). Lastly, they were asked if they experienced a miscarriage, fetal loss or death of a child in the time since their difficult childbirth.

Participants were asked several questions to briefly assess past and current psychiatric health. They were asked if they were diagnosed with any of the following psychiatric disorders

and to identify if they were afflicted by these conditions before and/or after their difficult childbirth experience: generalized anxiety disorder, panic disorder, other anxiety disorder (e.g., phobia), obsessive compulsive disorder, depression, PTSD, bipolar disorder, schizophrenia, or other. They were also asked to identify any psychological help or support they sought since childbirth including psychiatric medication, individual psychotherapy, and support group or group counseling.

Traumatic childbirth. Subjective and objective traumatic experiences in childbirth were assessed to determine the presence of a traumatic childbirth. Women were first asked to generally describe their childbirth experience in an open-ended format. Then, participants were asked to respond to two, dichotomous items: 1) during childbirth, was your life in danger or were you in danger of being seriously injured, and 2) during childbirth, was your baby's life in danger or was your baby in danger of being seriously injured. Women were asked to respond only in reference to their negative childbirth experience occurring in the past year. Women who responded "yes" to either or both of these items were considered to have subjectively appraised their childbirth as a traumatic experience. Similar methodology has been used in other research to identify childbirth as a traumatic stressor (Ayers, Wright, & Ford, 2015).

In order to determine the presence of an objective threat during childbirth, participants were asked additional questions about their pregnancy and childbirth experience. This methodology is similar to that used in validated measures of traumatic experiences and PTSD (Weathers et al., 2013). They were asked to complete a checklist of pregnancy and childbirth complications and injuries. Pregnancy complications included: hypertension, pre-eclampsia and/or HELLP (hemolysis, elevated liver enzymes, and low platelet count) syndrome, preterm premature rupture of membranes (PPROM), antenatal blood loss, congenital defects, and

membranes ruptured for longer than 24 hours. Childbirth complications included: postpartum hemorrhage, manual placenta removal, vaginal suturing, maternal ICU admittance, meconium in the fluid, neonatal asphyxia, NICU admittance, and neonatal infection requiring antibiotics. This checklist was developed by Stramrood and colleagues (2011) in a previous study of postnatal PTSD. The additional pregnancy complications of gestational diabetes and oligohydramnios, and childbirth complications of shoulder dystocia, placental abruption, labor lasting longer than 12 hours, and rapid labor (Beck, 2011; Garthus-Niegel et al., 2013) were added to the checklist. Participants were able to write in additional complications and injuries to self and/or baby not captured by this list. Participants were also asked to report the number of nights they stayed in the hospital after giving birth. In a previous study in which women's self-report of obstetric experiences in childbirth were checked against a medical chart audit, researchers found a 96% agreement between medically documented and self-reported obstetric events in childbirth (Creedy et al., 2000).

In addition, participants were asked several open-ended questions. Participants who previously indicated that they believed there was a threat of death or injury to them and/or their baby were asked to describe the specific events and experiences they had during childbirth that contributed to this belief. They were asked if they or their infant have lasting health problems or injuries resulting from childbirth events. Participants were then asked to describe these problems, if applicable.

Disclosure. The next survey component assessed disclosure of the negative childbirth experience. Participants were first provided a brief description of disclosure and examples of ways in which a person can disclosure. They were then asked to indicate on a dichotomous yes/no scale if they communicated with another person about their difficult childbirth

experience. Women who indicated that they communicated about their childbirth experience were then asked for additional information about their disclosure methods, targets, and reasons. With regards to disclosure methods, they were asked to identify the ways in which they attempted to communicate with anyone about their traumatic childbirth experience: talking in person, talking by telephone, talking via video chat, hand-written letter, texting, email, online chat or social media group, or other. With regards to disclosure targets, they were then asked to identify their relationship with the social partner(s) to whom they disclosed from the following list: partner, spouse or significant other; family member; a really close friend; a new friend made recently; acquaintance (e.g., a coworker, friend of a friend); mental health professional (e.g., psychiatrist, therapist, counselor); medical professional (e.g., doctor, nurse); religious/spiritual guide; in person support group; online support group; mother or parent-related group (e.g., mom's group, parenting class, Mommy and Me group); social media group; or other. They were asked to identify how much detail they provided when they disclosed on a 5-point scale from 1 (*briefly mentioned it*) to 5 (*described what happened in detail*). Similar methodology assessing extent of disclosure was used by Ullman and Filipas (2001) in a study of disclosure following sexual assault. Participants who disclosed were then asked their reasons for disclosing in an open-ended question. All participants were asked if they wanted to communicate with someone about their childbirth experience but chose not to, and reasons for not disclosing in an open-ended question.

Social responses to disclosure. Only women who responded "yes" to the dichotomous disclosure item completed items regarding social responses to disclosure. Perceptions of unsupportive social responses to traumatic childbirth disclosure were measured using the Unsupportive Social Interactions Inventory (USII; Ingram et al., 2001). The USII is a 24-item

scale measuring unsupportive or upsetting social responses concerning disclosure about an identified stressful life event. Individuals responded on a 5-point scale to indicate the amount of each type of response they received from other people regarding the stressful experience (0 = *none*, 4 = *a lot*). A total score is obtained by taking the mean across all 24 items. The USII has four subscales: Distancing (e.g., "changed the subject before I wanted to"), Bumbling (e.g., "seemed to be telling me what he or she thought I wanted to hear"), Minimizing (e.g., "said I should look on the bright side"), and Blaming (e.g., "seemed disappointed in me"). Each subscale consists of six items, and subscale scores were obtained by calculating the mean score across subscale items. Instructions were modified slightly to indicate that women should respond to items regarding disclosing about their negative childbirth experience.

Psychometrics of the USII were originally evaluated in a sample of college students, but it has also been used in samples of individuals coping with cancer (Figueiredo, Fries, & Ingram, 2004), infertility (Mindes et al., 2003), and HIV/AIDS (Ingram, Jones, Fass, Neidig, & Song, 1999), with Cronbach's alpha ranging from .86 to .95 for the total scale and from .70 to .89 for the USII subscales. Ingram and colleagues (2001) also demonstrated construct validity of the USII as scores do not correlate with those on measures of general social support. In the current study, Cronbach's alpha for the total scale was .94 with subscale alphas ranging from .81 to .92.

To be sure experiences of social responses to traumatic childbirth disclosure were fully captured, participants were also asked to respond to several additional items drawn from the Social Reactions Questionnaire (SRQ; Ullman, 2000). The SRQ was designed to measure perceptions of both positive and negative reactions to disclosure of a sexual assault experience, and women often compare their negative childbirth experiences to sexual victimization (Beck 2004; 2006). The SRQ is a 48-item measure assessing the frequency with which individuals

received different types of reactions from social partners when they disclosed a sexual assault experience. Participants respond to each item on a rating scale bounded by 0 (*never*) and 4 (*always*) scale. The SRQ measures both negative and positive social reactions. The five subscales that measure negative social reactions to disclosure are: Treat Differently, Distraction, Take Control, Victim Blame, and Egocentric Reactions. Participants were asked to respond to several items from these subscales that represent themes not captured by the USII and that may be relevant to traumatic childbirth. From the Treat Differently subscale, participants were asked to respond to the following items: "Treated you differently in some way than before you told him/her that made them feel uncomfortable," and "Acted as if you were damaged goods or somehow different now." From the Distraction subscale, they were asked to respond to the following items: "Told you to stop talking about it," and "Told you to stop thinking about it." From the Take Control subscale, they were asked to respond to the following items: "Made decisions or did things for you," and "Tried to take control of what you did/decisions you made." Finally, from the Egocentric Reactions subscale, they were asked to respond to the following items with the word "perpetrator" changed to "physicians or medical staff": "Expressed so much anger at *physicians or medical staff* that you had to calm him/her down," and "Said he/she feels personally wronged by your experience." No items from the Victim Blame subscale were included, as the USII has a Blaming subscale with substantial overlap of items. The Cronbach's alpha for each of these subscales was .80, .86, .83, .77, and .83, respectively (Ullman, 2000). Participant responses to the negative SRQ items were combined with the USII items in a factor analysis to create a traumatic childbirth version of the USII (USII-TC) for use in all analyses.

Participants were also asked to respond to the items comprising the two SRQ positive social responses to disclosure subscales: 15-item Emotional Support/Belief subscale (e.g., "Told

you that you were not to blame") and 4-item Tangible Aid/Informational Support subscale (e.g., "Helped you get medical care"). One item from the Tangible Aid/Information Support subscale was not included as it is relevant to sexual assault but not traumatic childbirth: "Took you to the police." Cronbach's alphas for these positive subscales in a sample of sexual assault survivors were .93 and .84, respectively (Ullman, 2000). In the current study, Cronbach's alpha was .89 for the Emotional Support/Belief subscale and .76 for the Tangible Aid/Informational Support subscale.

All participants were also asked to respond to several open-ended items assessing additional positive and negative social responses to their childbirth they received that may not have been captured by previous items. Based on Ullman's (2000) development of the SRQ, participants were asked three open-ended questions: 1) "Is there anything else that someone has said or done related to your childbirth experience that was annoying, upsetting, made you angry, or rubbed you the wrong way?," 2) "Is there anything else that someone has said or done related to your childbirth experience that was helpful or comforting?," and 3) "Is there anything you wish someone would have done or said to you to help you with your childbirth experience?"

Posttraumatic cognitions. Post-traumatic cognitions were measured with the Post-traumatic Cognitions Inventory (PTCI; Foa et al., 1999). This 33-item measure assesses thoughts and beliefs related to trauma exposure with three subscales: Negative Cognitions about the Self (e.g., "I feel like I don't know myself anymore"), Negative Cognitions about the World (e.g., "I have to be on guard all the time"), and Self Blame (e.g., "There is something about me that made the event happen"). Participants respond on a 7-point Likert scale from 1 (*totally disagree*) to 7 (*totally agree*). Participants were instructed to respond to items in reference to their identified adverse childbirth experience. Subscale scores were obtained by summing item responses and

dividing this sum by the total number of items on that subscale. A total measure score was obtained by summing all item responses. In a mixed sample of undergraduate student volunteers and adults seeking treatment for PTSD symptoms, this measure demonstrated good internal consistency for the total scale (Cronbach's alpha = .97) and each subscale (Cronbach's alpha ranged from 0.86 to 0.97; Foa et al., 1999). This measure has been used in studies of cognitive models of PTSD following childbirth (Ford et al., 2010) and other types of trauma, such as motor vehicle accident (Beck et al., 2004). In the replication study by Beck and colleagues (2004) examining posttraumatic cognitions following motor vehicle accident, internal consistency continued to be adequate with Cronbach's alpha of .93 for the total measure and .81 to .93 for the subscales. In the current study, Cronbach's alpha for the total measure was .97 with subscale alphas ranging from .83 to .97.

Coping. Coping was measured with the short form of the Coping Strategies Inventory (CSI-S; Tobin, Holroyd, Reynolds, & Wigal, 1989; Tobin, 2001). The CSI-S assesses the extent to which coping strategies were used to cope with a specific, identified stressor. Participants were asked to respond to CSI-S items with regards to coping with their negative childbirth experience. Participants responded on a 5-point scale bounded by 1 (*not at all*) and 5 (*very much*). The original 72-item measure (Tobin et al., 1989) was shortened to a 32-item version containing the four highest loading items within each of eight primary subscales. For the current study, items representing maladaptive coping, or labeled Disengagement Coping, were included. These subscales include: Problem Avoidance (e.g., "I went along as if nothing were happening"), Wishful Thinking (e.g., "I hoped a miracle would happen"), Self Criticism (e.g., "I realized that I was personally responsible for my difficulties and really lectured myself"), and Social Withdrawal (e.g., "I spent more time alone"). Cronbach's alphas for these primary subscales

were above .70 (Tobin, 2001). In the current study, Cronbach's alpha for total Disengagement Coping was .92 with subscale alphas ranging from .74 to .94.

Childbirth-specific PTSD. Current PTSD symptomology was assessed using the PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013). The PCL-5 is a 20-item measure of PTSD symptom experience in the past month. Individuals typically respond in reference to a specific stressful experience. As the current study assessed PTSD symptoms specific to the childbirth experience, instructions indicated that participants should respond with respect to only their identified negative childbirth experiences, and items were modified with the words "stressful experience" replaced with "giving birth." Items correspond with the four DSM-5 PTSD symptom clusters. Five items assess cluster B symptoms of intrusion, two items assess cluster C symptoms of avoidance, seven items assess cluster D symptoms of alterations in cognitions and mood, and six items assess cluster E symptoms of alterations in arousal and reactivity. Participants were asked to rate on a 5-point scale how bothered they had been by each symptom in the past month on a scale bounded by 0 (*not at all*) and 4 (*extremely*). Scores range from 0 to 60 with higher scores indicative of greater PTSD symptomology. In a validation study among military veterans, Wortmann and colleagues (2016) determined that scores above 33 are considered clinically significant. In this same study, Cronbach's alpha for the total measure and subscales were as follows: .91 total measure, .80 Cluster B, .83 Cluster C, .82, Cluster D, and .75 Cluster E. In the current study, Cronbach's alpha for the total measure was .94 with subscale alphas ranging from .80 to .90.

Postpartum depression. As an additional measure of postpartum psychological adjustment, participants were asked to complete the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987), a self-report measure of symptoms of depression.

Participants respond to ten items on a 4-point scale (0 to 3) to assess depressive symptoms occurring in the past week (e.g., "I have felt sad or miserable," "things have been getting on top of me"). Total scores range from 0 to 30 with higher scores indicating more severe depressive symptoms. Various clinical cutoff scores can be used to determine a positive screen for depression. However, a cutoff score of 13 or above has demonstrated a sensitivity of 86% and specificity of 78% for identifying women at risk for postpartum depression in the original validation study sample of women six weeks postpartum. In this same study, the EPDS demonstrated adequate reliability with Cronbach's alpha of .87 (Cox et al., 1987). As the EPDS does not measure symptoms of depression that overlap with physical experiences in the postpartum period (e.g., fatigue), it is the most commonly used measure of postpartum depression symptoms and an ideal measure specifically of depression in postpartum women (Sit & Wisner, 2009). Cronbach's alpha in the current study was .92.

Trauma history. Experiences of past traumatic events were assessed using the Stressful Life Events Screening Questionnaire (SLESQ; Goodman, Corcoran, Turner, Yuan, & Green, 1998). The SLESQ is a 13-item measure of potentially traumatic life events including life threatening illness or accident, mugging or robbery, rape or other sexual assault, physical abuse, verbal emotional abuse, threat with a weapon, and other situations threatening to life or of injury (e.g., military combat). Other items assessed exposure to threat to life or of serious injury to others including death of an important other by accident, homicide, or suicide. Participants were asked if they experienced each of these 13 events, and those who responded "yes" were asked additional qualifying information (e.g., age at time of event, description of the threat). Where appropriate, women were asked not to consider their identified negative childbirth experience when responding. If a participant did not respond to these additional items, the event lacking

descriptive information was not coded as a prior trauma experience in accordance with the scoring protocol developed by the original authors. Using this decision rule, two positive responses to item 4 (death of loved one) were removed. The number of "yes" responses were added to determine total prior trauma exposure. One participant endorsed 10 prior traumatic experiences, and this score was identified as an outlier. Therefore, her score was not included in any analyses. The SLESQ demonstrated adequate test-retest reliability (median kappa of .73), convergent validity with a trauma interview (r = .77), and specificity for traumatic events in the original validation sample of male and female college students (Goodman et al., 1998).

Alarm Protocol

At the conclusion of the survey, all participants were provided with a message through Qualtrics including contact information for national organizations focused on providing support and resources for individuals with postpartum emotional difficulties, elevated emotional distress, and/or traumatic stress. These organizations included: The Postpartum Stress Center (http://postpartumstress.com/), Postpartum Support International (http://www.postpartum.net/), Hand to Hold (http://handtohold.org/), National Center for PTSD (http://www.ptsd.va.gov/), Rape, Abuse, and Incest National Network (https://rainn.org/). Participants who indicated they were experiencing thoughts of suicide or self-harm on the EPDS (i.e., responded "hardly ever," "sometimes," or "yes, quite often" to the survey item "the thought of harming myself has occurred to me") were provided with an alternative message including the aforementioned resources for postpartum distress and also encouraging them to contract the National Suicide Prevention Lifeline (1-800-273-TALK, http://www.suicidepreventionlifeline.org) in case of emergency. The two versions of this message can be found in Appendix C.

Data Analysis

SPSS and Microsoft Excel were used for all analyses. Qualitative data analysis consisted of the development of a codebook describing common themes reflected in participant responses to open-ended items. Qualitative responses were examined to ensure participant eligibility prior to completing quantitative analyses. Specifically, qualitative responses were utilized to ensure that participants had not experienced a fetal, neonatal, or child loss since their difficult childbirth experience, and to determine if participants met criteria for a traumatic childbirth.

Qualitative analyses. A research assistant and I developed a codebook based on open-ended responses from participants enrolled during the first month of data collection (n = 58) to the following open-ended survey items: difficult childbirth description, description of events contributing to trauma appraisal (infant and mother), lasting health problems, disclosure reasons, non-disclosure reasons, other types of negative support, other types of positive support, and other types of support they wanted but did not receive. First, we divided these open-ended items between us, independently identified themes for our assigned items, and coded participant responses pertaining to these themes ("1" = theme reflected in participant response, "0" = theme not reflected in participant response). We then exchanged items to verify each other's themes and response codes. We then compared our findings, refined common themes with the assistance of a faculty advisor, and developed a standardized codebook. We then proceeded to independently code responses for all open-ended items for all participants.

Interrater reliability was evaluated by calculating Cohen's kappa for all items and themes, with kappa values ranging from 0 to .79 representing no-to-moderate agreement and values of .80 and above representing strong agreement. If an item theme demonstrated a kappa value below .80, the standardized codebook was edited and these themes were re-coded. Any codes

that remained not in agreement between raters were discussed until 100% agreement was reached and a kappa of 1 was reached for all items and themes. Themes with low frequencies were collapsed with closely-related themes to capture a larger theme, or they were included in an "other" category. The final codebook can be found in Appendix D.

Determination of traumatic childbirth. Prior to quantitative analyses, participants were categorized into two groups: those who had a traumatic childbirth and those who did not. In order to ensure the operational definition of traumatic childbirth was in accordance with DSM-5 criteria for a traumatic event, women were identified as having a traumatic childbirth if they experienced an objective medical or obstetric threat to mother and/or baby during childbirth. Participants were determined to have an objective threat to herself and/or her baby if she reported the following: very or extremely preterm gestational age (born at less than 32 weeks gestation), very or extremely low birth weight (born at less than 1500 grams), emergency C-section, pre-eclampsia or HELLP syndrome, PPROM, birth defect, neonatal asphyxia, NICU admittance, maternal ICU admittance, placental abruption, peripartum hemorrhage, maternal hospital stay greater than two nights, or two pregnancy complications written in by participants: incompetent cervix and peripartum cardiomyopathy. These complications were determined to present an objective threat based on information from the American College of Obstetricians and Gynecologists (ACOG; 2016) and Centers for Disease Control (CDC; 2018). For the current study, traumatic childbirth was operationalized as having an objective threat present and subjectively appraising childbirth as traumatic (i.e., reporting that the threat of death or injury to mother, baby, or both was present). The prevalence of traumatic childbirth within this sample was explored. Only participants determined to have a traumatic childbirth were included in analyses of this project's specific aims.

Quantitative analyses. Descriptive statistics were conducted for all variables with means, standard deviations, and ranges for continuous variables, and frequencies and percentages for categorical variables. Skewness and kurtosis were examined for continuous variables and non-normally distributed variables were transformed prior to the remainder of analysis.

Specific aim 1 was to explore disclosure of traumatic childbirth and its relationship with postpartum psychological distress. I described women's disclosure of traumatic childbirth by determining the percentage of women who reported they disclosed. Rates of disclosure in this sample were compared with rates of disclosure following other types of trauma including sexual assault. To determine if disclosure rates are similar following traumatic childbirth, a *Z*-test comparing traumatic childbirth disclosure rates with disclosure rates in each of these populations was performed. Disclosure was also explored in relation to demographic and childbirth characteristics (e.g., race, age, time since childbirth). Differences in demographic, pregnancy, and childbirth experiences were explored between disclosure groups using Chi-square analyses and *t*-tests. Frequencies and percentages of listed disclosure methods (e.g., online, in person, by phone) and targets were reported, and the mean response to the disclosure extent item was identified. Common reasons for disclosure and non-disclosure were derived from qualitative responses to the open-ended item asking women to identify reasons they did and did not disclose. Common reasons women disclosed and reasons women chose not to disclose were determined by first identifying common themes in responses and then determining the percentage of participants who disclosed that reported each theme.

Analyses of covariance (ANCOVAs) were utilized to test the hypotheses that participants who disclosed would report lower symptoms of depression and PTSD than those who did not disclose (hypotheses 1 and 2). Separate ANCOVAs were conducted with disclosure as the fixed

factor and either total EPDS or PCL-5 score as the dependent variable. Covariates included prior trauma exposure (SLESQ total score), and demographic, pregnancy, and childbirth characteristics that demonstrated significant relationships with the appropriate dependent variable.

Specific aim 2 was a descriptive aim to explore social responses to traumatic childbirth disclosure. Only participants who disclosed were included in the analysis of this specific aim. Positive/supportive and negative/unsupportive social responses to disclosure were explored. To describe the types of positive social responses women received to disclosure, disclosing participants' scores on the SRQ positive reactions subscales, Emotional Support/Belief and Tangible Aid/Informational Support, were examined. Participants' responses to the open-ended item on positive and supportive reactions to childbirth received were also analyzed. Common themes were first identified and percentages of disclosing participants who reported each theme were reported.

Next, negative/unsupportive social responses to disclosure were explored by performing a principal components analysis with an orthogonal rotation of the USII items and items from the SRQ negative subscales. An orthogonal rotation was utilized as the factors were not expected to correlate with each other (i.e., perceiving a high frequency of one type of social response was not expected to significantly correlate with the perception of other types of social responses). Factor structure and loadings of individual items were examined to determine their relevance in assessing negative social responses specifically to disclosing traumatic childbirth. Items were retained on a given factor if they loaded onto that factor at a value of .40 or above, and they did not load onto any other factor at .40 or above. Descriptive statistics for these factors and item loadings were reported and comprised a traumatic childbirth version of the USII (USII-TC) that

was utilized for the remainder of analyses. Common themes were also identified from the open-ended item asking about additional negative responses participants received related to childbirth, and the percentage of participants reporting each theme were reported. Common responses to the open-ended item are recommended for inclusion on a future version of the USII-TC.

Specific aim 3 was to examine relationships of negative/unsupportive responses to traumatic childbirth disclosure with postpartum depressive and childbirth-specific PTSD symptomology. Linear regressions were utilized to test the hypotheses that higher scores on the USII-TC would be positively related to depression and PTSD symptomology among participants who disclosed (hypotheses 3 and 4). Separate regressions were conducted with USII-TC score as the predictor and either total EPDS or PCL-5 score as the criterion. Control variables of prior trauma (SLESQ) and demographic, pregnancy, and childbirth characteristics that demonstrated significant relationships with the appropriate criterion variable were entered into the first block of predictors as covariates. Positive social responses to disclosure (total positive SRQ subscale scores) were entered into the second block if they demonstrated a significant relationship with the criterion variable. Negative/unsupportive responses to disclosure (total USII-TC score) was entered into the final block.

Specific aim 4 was to examine several mediation models in which childbirth-specific coping and posttraumatic cognitions mediated the relationship between negative/unsupportive social responses to traumatic childbirth disclosure and depression and PTSD symptomology. To determine the appropriateness of the mediation analysis, relationships between the predictor (USII-TC), mediators (CSI and PTCI), and dependent (EPDS or PCL-5) were examined first. Linear regression analyses were utilized to test the hypotheses that greater negative/unsupportive responses to disclosure (USII-TC) would be associated with greater maladaptive coping

(Disengagement Coping score of the CSI; hypothesis 5), and greater posttraumatic cognitions (total PTCI score; hypothesis 6). Next, linear regression was utilized to test the hypotheses that maladaptive coping (hypothesis 7 and 8) and posttraumatic cognitions (hypothesis 9 and 10) would be associated with greater depression (EPDS) and PTSD (PCL-5) symptom severity. Prior trauma exposure (total SLESQ score), and demographic, pregnancy, and childbirth characteristics that demonstrated significant relationships with the dependent variable were included in the first block of predictors for all analyses as covariates. Positive responses to disclosure were entered into the second block of predictors if they demonstrated significant relationship with the outcome variable. The final block included the appropriate predictor variable.

Finally, I hypothesized that maladaptive coping strategies (CSI Disengagement Coping) and posttraumatic cognitions (PTCI) would mediate the relationship between negative/unsupportive social responses (USII-TC) and depression (EPDS) and PTSD (PCL-5) symptoms. This mediation analysis was performed using Hayes' Process Model macro for SPSS (Hayes, 2013). Four separate simple mediation analyses were conducted with USII-TC as the predictor: 1) CSI Disengagement as the mediator and EPDS as the outcome (hypothesis 11), 2) CSI Disengagement as the mediator and PCL-5 as the outcome (hypothesis 12), 3) PTCI as the mediator and EPDS at the outcome (hypothesis 13), and 4) PTCI as the mediator and PCL-5 as the outcome (hypothesis 14). Covariates were selected based on earlier analyses that demonstrated significant relationships between the outcome variable and prior trauma, positive responses to disclosure, and participant demographic, childbirth, and pregnancy characteristics.

The analysis of the third specific aim was used to calculate an estimated sample size using GPower 3.2 (Faul, Erdfelder, Buchner, & Lang, 2009). The ANCOVAs used to test

hypotheses 3 and 4 required the largest sample size to achieve adequate power. To ensure there was an 80% chance of detecting a medium effect size ($f = .25$, $\alpha = .05$), a minimum sample size of 128 was calculated. With the recruited sample size of 61 participants who completed the PCL-5 and/or EPDS, a power of 48% was achieved to detect a medium-sized effect.

CHAPTER III: RESULTS

Of the 341 women who responded to the survey, 338 provided consent. Of those who provided consent, 314 responded to all of the eligibility items. Of these, no women were excluded for being less than 18 years old, three were excluded for living outside the United States, 13 were excluded for reporting that they did not have a difficult childbirth in the last year, and 20 were excluded for indicating that their child resulting from their difficult childbirth was not living at the time of study participation. Six women were excluded from analyses due to the duration of time since they had given birth, with three women giving birth less than 30 days prior to participation and three giving birth over one year prior to participation. An additional five women were excluded, because they responded "yes" to an item asking if they had experienced a miscarriage, fetal, or infant/child loss in the time since their difficult childbirth. Sixty women were removed from analyses due to missing over 80% of the data. An additional three women were removed from analysis because it was discovered during qualitative analysis that they had a fetal/neonatal demise with their identified adverse childbirth experience (i.e., the woman was pregnant with twins and one of her babies did not survive).

Determination of Traumatic Childbirth

Of the 204 participants who met all eligibility criteria and had less than 80% missing data, 40 exited the study survey before completing the objective and subjective trauma appraisal items. There were no differences in demographic, pregnancy, or childbirth characteristics between those who exited the survey and those who did not. Data from the remaining 164 participants were examined further.

The majority of participants (n = 148, 90.2%) were determined to have had an objective threat present during their childbirth. Of those who had an objective threat present during

childbirth, 76 had pregnancy complications, an additional 44 had childbirth complications, an additional four more gave birth to very or extremely low birth weight babies, 16 more had an emergency C-section, and six more were hospitalized for three or more nights after birth. An additional two were determined to have had an objective threat present during birth based on pregnancy and/or childbirth characteristics reported in their qualitative responses (e.g., nuchal or prolapsed umbilical cord, pelvic floor damage resulting from instrumental vaginal delivery). There were no differences in demographics or obstetric history between women who had an objective threat present and those who did not.

Subjective appraisal of childbirth as traumatic was examined next. Over three-quarters of the sample (n = 123, 75.0%) appraised childbirth as traumatic. Of these participants, 20 (16.3%) reported fear of death or injury to only herself, 50 (40.7%) reported fear of death or injury to only her baby, and 53 (43.1%) reported both.

Traumatic childbirth was determined by the presence of an objective threat and subjective appraisal of childbirth as traumatic. Of the 164 participants, 158 (96.3%) had an objective threat present during birth. Of those 158, 129 (81.6%) appraised childbirth as traumatic. Data from these 129 participants were utilized for the remainder of analyses. Twenty-nine women were determined to have an objective threat present, but did not appraise childbirth as traumatic, and six women appraised childbirth as traumatic but did not have an objective threat present.

Sample Characteristics

Participant categorical demographic variables are displayed in Table 1. The majority of participants identified as White, non-Hispanic, married, and living with their partner. Women who identified as White were significantly more likely to be married (80.6%) than non-White women (52.6%), $X^2(1) = 6.98$, $p = .008$. All but one participant reported that they earned a

Table 1

Total Sample Categorical Demographic Variables

Characteristic	*n*	%
Race		
Caucasian/White	108	83.7
African American/Black	11	8.5
Mixed race	2	1.6
Pacific Islander	2	1.6
Asian	2	1.6
Other	3	2.3
Hispanic ethnicity	11	8.5
Marital status		
Married	98	76.0
Single	24	18.6
Divorced	4	3.1
Separated	2	1.6
Romantic involvement		
Partnered, living together	120	93.0
Not partnered	6	4.7
Partnered, not living together	2	1.6
Education		
Middle school	1	0.8
High school diploma	14	10.9
Some college	39	30.2
Vocational training	7	5.4
Associate's degree	13	10.1
Bachelor's degree	33	25.6
Master's degree	20	15.5
Doctorate, professional degree	2	1.6
Employment		
Not employed	53	41.1
Full-time	58	45.0
Part-time	14	10.9
On disability	4	3.1
Health insurance		
Private/employer	89	69.0
Medicaid/Medicare	30	23.3
Tricare	8	6.2
No insurance	1	0.8

high school diploma, and 42.6% of participants had at least a 4-year degree (n = 55). Most women were employed either part- or full-time (n = 72, 55.8%) and had private/employer health insurance. Women who had at least a 4-year degree were more likely to be employed [69.1% vs. 45.9%, $X^2(1) = 6.85$, $p = .009$] and married [87.3% vs. 68.5%, $X^2(1) = 6.17$, $p = .013$]. Women ranged in age from 19 to 46 years (M = 29.29 years, SD = 5.76). Women who had a at least a 4-year degree were older (M = 31.58 years, SD = 5.39) than those without at least a 4-year degree (M = 27.58, SD = 5.46), $t(127) = 4.14$, $p < .001$.

Self-reported mental health diagnoses and treatments are summarized in Table 2. The majority of participants (n = 84, 65.1%) reported ever being diagnosed with at least one mental

Table 2

Total Sample Mental Health Characteristics

Characteristic	*n*	%
Diagnosis before pregnancy		
Generalized anxiety	36	27.9
Panic disorder	12	9.3
Other anxiety disorder	8	6.2
Depression	40	31.0
PTSD	11	8.5
Bipolar disorder	10	7.8
Schizophrenia	1	0.8
Diagnosis after pregnancy		
Generalized anxiety	44	34.1
Panic disorder	14	10.9
Other anxiety disorder	13	10.1
Depression	48	37.2
PTSD	35	27.1
Bipolar disorder	8	6.2
Schizophrenia	1	0.8
Other	2	1.6
Postpartum psychological support		
None	61	47.3
Medication	33	25.6
Individual psychotherapy	33	25.6
Group counseling	24	18.6
Other	4	3.1

health disorder, with 62 (48.1%) having a mental health diagnosis prior to pregnancy and 67 (51.9%) having a mental health diagnosis after pregnancy. Of those reporting a mental health diagnosis after pregnancy, 76.1% (n = 51) reported that they sought postpartum psychological support or help. Women most often sought postpartum psychological support with psychiatric medication and/or individual counseling.

Categorical pregnancy and childbirth characteristics are summarized in Table 3. Most women had been pregnant more than once (gravidity: range 1 to 6+, M = 2.16, SD = 1.45), but had only one childbirth experience (parity: range 1 to 6+, M = 1.64, SD = 1.01). Participant age was positively correlated with gravidity (r = .31, p < .001) and parity (r = .30, p < .001). Over one-third of participants had a prior pregnancy loss. The majority of women had a singleton pregnancy. Women gave birth between 4 and 52 weeks prior to study participation (M = 24.91 weeks, SD = 14.03). Most participants had pain relief during childbirth, and most women had at least one support person present during delivery. At time of study participation, women who had a at least a 4-year college degree had infants who were younger (M = 21.09 weeks, SD = 12.01) than those without at least a 4-year degree (M = 27.74 weeks, SD = 14.81), $t(127) = 2.73$, p = .007. The majority of women gave birth by C-section (n = 91, 70.5%). Women who gave birth by C-section (emergency or planned) were significantly older (M = 29.97 years, SD = 6.04) than women who had a vaginal birth (M = 27.70 years, SD = 4.78), $t(126) = 2.04$, p = .044. Women gave birth to infants at between 23 and 42 completed weeks gestation (M = 34.04 weeks, SD = 5.36), and to infants weighing between 425.24 and 4,507.57 grams (M = 2270.23 grams, SD = 1099.28). The majority of women gave birth to infants who were pre-term (fewer than 37 completed weeks gestation, n = 70, 54.3%), and over half of participants gave birth to infants of

Table 3

Total Sample Pregnancy and Childbirth Characteristics.

Characteristic	*n*	%
Primagravida	59	45.7
Primaparous	81	62.8
Prior pregnancy loss	50	38.8
Multiple pregnancy	13	10.1
Mode of delivery		
Emergency C-section	87	67.4
Vaginal	31	24.0
Instrumental vaginal	6	4.7
Planned C-section	4	3.1
Term birth		
Full term (39+ weeks)	38	29.5
Early term (37-38+6 weeks)	20	15.5
Moderate to late preterm (32-37 weeks)	28	21.7
Very preterm (28-32 weeks)	19	14.7
Extremely preterm (less than 28 weeks)	23	17.8
Birth weight		
Large (4200 grams and above)	5	3.9
Normal (2500-4199 grams)	52	40.3
Low (1500-2499 grams)	31	24.0
Very low (1000-1499 grams)	14	10.9
Extremely low (999 grams and less)	23	17.8
Pain relief in the delivery room		
None	15	11.6
Epidural	80	62.0
Intravenous	29	22.5
General anesthesia	24	18.6
Local anesthetic	16	12.4
Spinal block	12	9.3
Narcotic injection	1	0.8
Social support in the delivery room		
No support present	8	6.2
Baby's father	102	79.1
Family member	25	19.4
Midwife	6	4.7
Friend	5	3.9
Doula	4	3.1
Other partner	1	0.8
Birth photographer	1	0.8
Currently pregnant	5	3.9

low birth weight (less than 2500 grams, $n = 68$, 52.7%). As expected, gestational age and birth weight were strongly correlated ($r = .94$, $p < .001$). Only birth weight was used in further analyses to prevent redundancy. Women who had at least a 4-year college degree gave birth to infants at a higher birth weight ($M = 2497.91$ grams, $SD = 1117.31$) than women who did not have at least a 4-year college degree ($M = 2097.06$ grams, $SD = 1060.68$), $t(123) = 2.05$, $p = .043$. The majority of participants were not pregnant at the time of study participation.

Self-reported pregnancy and childbirth complications are summarized in Table 4. Women reported having between zero and six pregnancy complications ($M = 1.29$, $SD = 1.21$), with the majority reporting at least one pregnancy complication ($n = 85$, 65.9%). The most commonly reported pregnancy complications were hypertension, pre-eclampsia or HELLP syndrome, and pre-term premature rupture of membranes. Women reported having between zero and five childbirth complications ($M = 2.01$, $SD = 1.31$), and the majority reported having at least one childbirth complication ($n = 108$, 83.7%). The most commonly reported childbirth complications were NICU admittance, labor lasting longer than 24 hours, and infection. Total number of pregnancy and childbirth complications were not correlated ($r = .15$, $p = .102$), but women who had at least one pregnancy complication were more likely to also have at least one childbirth complication (91.8% vs. 68.2%), $X^2(1) = 11.83$, $p = .001$. Women were more likely to have at least one childbirth complication if they were multigravida (89.7%) compared with primigravida women (76.3%), $X^2(1) = 4.13$, $p = .042$. Women who had at least one pregnancy complication gave birth to infants at lower birth weight ($M = 2122.41$ grams, $SD = 1053.63$) than women without pregnancy complications ($M = 2552.11$ grams, $SD = 1141.37$), $t(123) = 2.11$, $p = .037$. Length of maternal hospitalization after childbirth ranged from zero to more than six nights ($M = 3.14$, $SD = 1.40$). Women who had a C-section were hospitalized for significantly longer ($M =$

Table 4

Total Sample Pregnancy and Childbirth Complications

Characteristic	*n*	%
Pregnancy complications		
Hypertension	41	31.8
Pre-eclampsia or HELLP	32	24.8
Premature rupture of membranes	25	19.4
Blood loss	10	7.8
Membranes ruptured >24 hours	9	7.0
Gestational diabetes	8	6.2
Oligohydramnios	8	6.2
Congenital defects	5	3.9
Other		
Polyhydramnios	5	3.9
Preexisting medical condition	5	3.9
Incompetent cervix, cervical insufficiency	4	3.1
Anemia	3	2.3
Cholestasis of pregnancy	2	1.6
Placenta accreta/previa	2	1.6
PUPPS	2	1.6
Hyperemesis gravidarum	1	0.8
Peripartum cardiomyopathy	1	0.8
Hypotension	1	0.8
Calcified placenta	1	0.8
Umbilical cord blood flow restriction	1	0.8
Low platelets	1	0.8
Childbirth complications		
NICU admittance	70	54.3
Labor lasting >24 hours	39	30.2
Infection	25	19.4
Postpartum hemorrhage	24	18.6
Neonatal asphyxia	22	17.1
Perineal tearing	17	13.2
Meconium	11	8.5
Placental abruption	14	10.9
Manual placenta removal	14	10.9
Precipitous labor	10	7.8
Maternal ICU admittance	8	6.2
Shoulder dystocia	2	1.6
Other		
Preterm labor	2	1.6
Hysterectomy	1	0.8
Hypotension	1	0.8
Pneumothorax	1	0.8

Note: PUPPS: pruritic urticarial papules and plaques of pregnancy

3.30 days, *SD* = 1.45) than women who gave birth vaginally (*M* = 2.50 days, *SD* = 1.11), *t*(116) = 2.98, *p* = .004.

Table 5

Total Sample Lasting Infant and Maternal Health Problems

Characteristic	*N*	%
Infant health problem		
Pulmonary	11	8.5
Developmental	5	3.9
Vision	4	3.1
Neurological	3	2.3
Gastrointestinal	3	2.3
Other		
Anemia	1	0.8
Patent ductus arteriosus	1	0.8
Failure to thrive	1	0.8
Hearing loss	1	0.8
Scarring	1	0.8
Immune deficiency	1	0.8
Maternal health problem		
Cardiovascular/hematologic	9	7.0
Chronic pain	6	4.7
Mental health	3	2.3
Gynecologic	2	1.6
Musculoskeletal	2	1.6
Urinary/gastrointestinal	1	0.8
Other		
Infection	2	1.6
Scarring	1	0.8
Postpartum pre-eclampsia	1	0.8
Chronic migraine	1	0.8
High cholesterol	1	0.8

Approximately one-third of participants (*n* = 46, 35.7%) reported that they or their baby had a lasting health problem resulting from childbirth. Results from qualitative analysis of this open-ended item are displayed in Table 5. Twenty-one participants reported that their child had a lasting health problem, with the most common reported health problems being related to the infant's respiratory functioning (e.g., bronchopulmonary dysplasia, apnea of prematurity) and

long-term developmental delays (e.g., poor muscle tone). Twenty-three women reported that they suffered a lasting health problem, with the most frequently reported problems being related to cardiovascular functioning (e.g., postpartum hypertension) and chronic pain from their C-section incision.

Difficult Childbirth Characteristics

Difficult childbirth experiences. Participants described the details of their childbirth experience in response to the prompt, "describe your difficult childbirth." Nearly all participants provided a response to this item (n = 120, 93.0%). From these responses, five major themes were identified: 1) Medical characteristics, 2) Perception of risk, 3) Postpartum concerns, 4) Emotional reactions, and 5) Lack of healthcare support. Subthemes were identified within each major theme. Frequencies of themes and their respective subthemes are displayed in Table 6. Other experiences reported that did not fit within the major themes included having no memory of childbirth (n = 2), and one participant reported that another life stressor (i.e., death in the immediate family) contributed to distress during her childbirth.

Medical characteristics. Over 90% of participants referred to a medical aspect of pregnancy, childbirth, or their infant's condition in their childbirth description. The majority of participants noted complications during pregnancy (e.g., hypertension) and childbirth (e.g., meconium in the fluid). The majority of participants also noted the mode of delivery being C-section, while other medical interventions during pregnancy (i.e., being put on bedrest during pregnancy) and childbirth (i.e., induction or augmentation of labor with Pitocin or similar pharmacological agent) were noted less frequently. Over 70% noted concern for their baby's health just after birth by noting safety concerns due to prematurity and/or NICU admittance. This participant described her experience with unexpected childbirth complications:

> "… we tell people we need therapy for that evening. I had no idea pushing could take 2 hours. I had no idea the epidural might not work. My husband had no idea the doctor would rip me open with both hands and he'd see a river of blood. Next time we are having a doula." (White, age 31, primigravida, primiparous)

Table 6

Total Sample Difficult Childbirth Experience Themes

Theme/Subtheme	*n*	%
Medical characteristics	118	91.5
Pregnancy complications	83	64.3
C-section	82	63.6
Childbirth complications	73	56.6
Prematurity	48	37.2
NICU admittance	44	34.1
Induction	32	24.8
Bedrest	23	17.8
Perception of risk	51	39.5
Pain	31	24.0
Sense of urgency	23	17.8
Informed of risk	10	7.8
Exhaustion	3	2.3
Postpartum concerns	46	35.7
Neonatal complications	24	18.6
Maternal health problem	12	9.3
Infant health problem	8	6.2
Inability to breastfeed	7	5.4
Other postpartum difficulties	7	5.4
Emotional reactions	41	31.8
Separation from baby	23	17.8
Negative emotions	22	17.1
Positive reflections	12	9.3
Lack of healthcare support	34	26.4
Lack of support – medical professionals	24	18.6
Deviation from birth plan	20	15.5
Other	3	2.3

Perception of risk. Approximately 40% of participants included responses that indicated that experiences during childbirth increased their perception of risk to themselves or their baby. These experiences most often referred to high pain due to lack or failure of pain medication. Other common experiences included having a sense of urgency as indicated by her medical team seeming to be responding to an emergent situation, being informed by her medical team that

there was some risk of death or injury, and feeling unable to give birth safely due to feelings of exhaustion or extreme fatigue. One participant described her experience with postpartum hemorrhage:

> "When my daughter was born I don't even remember anything about her, I just remember so many hands grabbing at me, injecting me with things, pushing things inside of me, checking me, hooking me up to this and that and hearing my husband crying to get close to me but getting pushed away." (White, age 30, gravida 2, para 2)

Postpartum concerns. Although not prompted to consider postpartum experiences in their description, over a third of participants reported postpartum concerns in the childbirth description. Two subthemes pertained to postpartum concerns soon after giving birth; just over half of the responses reflecting postpartum concerns pertained to neonatal complications (e.g., intubation for respiratory distress) and approximately 15% of the responses noted inability to breast feed. One mother described her experience with her infant's NICU stay:

> "As the weeks went on I learned what reflux, bradys, tet spells, intubated, extubated, cpap, t, spo2, peep, and to every q hours, and the beeps of machines that became my music. I knew all this because this is where my son was. - the NICU and CICU. He was not at home cuddled in his elephant blanket, he wasn't wearing the clothes either I or my family picked out for him, he wasn't a regular baby. That was the traumatizing part, the part where you realize you didn't have the Gerber baby, the part where you realize you are part of a club you don't want to belong to but can't live without. The physical stress on the body of carrying and then delivering a baby either by C-section or vaginal birth is nothing. that is not what is difficult. Difficult is the blame you put on yourself for failing your child, self-loathing because your body failed you and your baby, the fear of everything you can't control, the increased fear and odd comfort because you are now educated more than you ever wanted to be on the life inside a NICU, watching your child fight to breathe, to eat, to just grow so you can both go home is more difficult than any pregnancy or delivery." (White, age 38, gravida 2, primiparous)

Approximately 15% to 25% of responses reflecting the postpartum concerns theme pertained to lasting difficulties, including lasting maternal health problems (e.g., PTSD), lasting infant health problems (e.g., developmental delay), and other concerns (e.g., difficulty bonding

with the baby). Responses from two participants capture the lasting effects of their childbirths on their relationships with their babies:

> "I still to this day, a year later, don't feel as though I gave birth. I feel like I was manipulated and coerced into procedures that weren't necessary and that this baby, even though I love him more than anything, is somehow less 'mine' because I didn't 'give birth' to him. I almost feel like he is adopted or is a step son maybe." (White, age 33, primigravida, primiparous)

> "I was sliced open like a god damn animal. I cannot look at my child, or think of her birth without feeling INTENSE anxiety." (White, age 41, gravida 6, para 4).

Emotional reactions. Just under one-third of participants noted a strong emotional reaction during childbirth in their childbirth description. The majority of these responses referred to difficulty being separated from their baby immediately after birth, due to post-operative restrictions following C-section, maternal health complications, and/or NICU admittance. The majority of responses reflecting the emotional reactions theme also noted that negative emotions such as sadness, helplessness, and/or fear during childbirth contributed to its difficult nature. Approximately 30% of the responses reflecting the emotional reactions theme included positive reflections on their childbirth and/or appreciation to have a healthy child at the time of participation. Most participants who noted positive reflections also described a negative emotional experience, as illustrated by this participant's response:

> "By 32 weeks and 3 days doctors decided it was time to induce. After 12 hrs of trying to induce they decided an emergency c-section was necessary due to my rising bp and the babies heart rate dropping. This was the most terrifying experience I was afraid for my child's life and knowing it was too soon to deliver. During the c section there were so many people in the room some from the nicu some students it was very overwhelming. But once I heard my baby cry I cried harder than I ever have. It was a relief. But child birth was not the beautiful experience I had always dreamed of. But I am blessed with a healthy baby." (Hispanic, age 33, gravida 4, primiparous)

Lack of healthcare support. Over a quarter of participants reported a perceived lack of support from their medical team during childbirth. Approximately 70% of responses reflecting

this theme noted a sense of distrust, misuse, and/or feeling coerced or forced into unwanted medical procedures. Approximately 60% of responses specifically noted that providers deviated from their established birth plan. One participant described her negative experience with an emergency C-section:

> "When we got to the hospital I went from a 7 to baby being fully engaged and at a 10. The nurse wanted to check me I told her no. I screamed no. She held me down and stuck her fingers inside me anyway. Then they rolled me to a bright room. I had my eyes closed. They told me to go from one table to another. I was in so much pain. I wanted to push. My body was pushing on its own. I got to the other table but I almost fell off. They strapped my arms down and my legs. My arms were out like Jesus on the cross. I was screaming that my baby was coming. I needed to push. My body was pushing on its own. I was yelling to put me under. No one was listening. They were just having conversations around me ignoring me." (White, age 30, gravida 4, para 4)

Another women described her experience with feeling coerced into an emergency C-section, which contributed to lasting mental health problems:

> "[The doctor] said normal labor was out of the question. For 45 minutes, I cried and explained I'd done this before, I wanted to try, while he told me every single horror story there has ever been about dead babies, stillborn babies, physically damaged babies, physically damaged mothers, etc. he bullied a very tired, very pregnant woman into major surgery. But I have a healthy baby, right? I am still in pain 6 months later. I have nightmares, anxiety, and fits of rage over what happened to me." (White, age 41, gravida 6, para 4)

Trauma appraisal related to baby. Most participants reported fear that their baby would die or be seriously injured during birth (n = 109, 84.5%). These participants were then asked to describe "the specific events and experiences they had during childbirth that contributed to this belief." Nearly all participants who received this prompt provided a response (n = 102, 93.4%). Responses to this item tended to be briefer in length compared with the childbirth description item. Based on responses to this open-ended item, three major themes were identified: 1) Medical characteristics, 2) Perception of risk, and 3) Lack of healthcare support.

Table 7

Themes Identified for Trauma Appraisal – Baby

Theme/Subtheme	*n*	%
Medical characteristics	97	89.0
Childbirth complications	66	60.6
Pregnancy complications	27	24.8
Prematurity	21	19.3
Neonatal complications	18	16.5
Perception of risk	27	24.8
Potential complications	24	22.0
Other	4	3.7
Lack of healthcare support	4	3.7
Other	3	2.8

Themes and respective subthemes are displayed in Table 7, including frequencies and percentages out of the 109 women who endorsed a trauma appraisal related to the baby. Similar to themes identified based on responses to the difficult childbirth experience open-ended item, medical characteristics was the most commonly identified theme. This theme included subthemes, the most common of which was childbirth complications (e.g., shoulder dystocia, meconium in the fluid), followed by pregnancy complications (e.g., PPROM, incompetent cervix), prematurity, and lastly, neonatal complications (e.g., intubation and feeding problems in the NICU). One-in-five participants reported that experiences that contributed to increased perception of risk during childbirth contributed to their appraisal of trauma, most often pertaining to the potential for medical complications to occur (e.g., needing to deliver to prevent hypoxia), and less frequently, other experiences such as the baby not crying at delivery, feeling uncertain of events or outcomes during birth, and a sense of urgency from the medical team (e.g., doctors rushing). A small percentage of participants noted that lack of support from their medical team contributed to appraisal of trauma (e.g., nursing staff not listening to the mother's concerns for the baby's safety). Several other contributors to trauma appraisal that did not align with these

major themes included having no other options but to have an emergency C-section (*n* = 1) and feeling afraid (*n* = 2).

Trauma appraisal to self. Seventy-one women (55.0%) reported the belief that their life was in danger or they were in danger of being seriously injured during childbirth. These participants were then asked to describe "the specific events and experiences they had during childbirth that contributed to this belief." Nearly all participants who viewed this prompt provided a response (*n* = 65, 91.5%). Similarly to the trauma appraisal item regarding the baby's health and well-being, these responses tended to be briefer in length. Based on responses to this open-ended item, four major themes were identified: 1) Medical characteristics, 2) Perception of risk, 3) Postpartum concerns, and 4) Lack of healthcare support. Themes and respective subthemes are displayed in Table 8, including frequencies and percentages out of the 71 women who endorsed a trauma appraisal related to themselves. Similarly to trauma appraisal regarding the baby's safety, medical characteristics was the most commonly identified theme. This theme included subthemes, most commonly of childbirth complications (e.g., infection, hemorrhage) followed by pregnancy complications (e.g., preeclampsia) and other health problems (e.g., lupus flare triggered by pregnancy). An increased perception of risk during childbirth contributed to

Table 8

Themes Identified for Trauma Appraisal - Self

Theme	*n*	%
Medical characteristics	59	83.1
Childbirth complications	33	46.5
Pregnancy complications	30	42.3
Other health problem	5	7.0
Perception of risk	26	36.6
Potential complications	23	32.4
Pain	4	5.6
Postpartum concerns	4	5.6
Lack of healthcare support	4	5.6

appraisal of trauma, most frequently pertaining to the potential for medical complications to occur (e.g., needing to deliver emergently to prevent eclampsia), and less frequently to high pain. A small percentage of participants noted postpartum concerns (e.g., lack of support from their baby's father postpartum) and/or lack of support from their medical team during childbirth.

Specific Aim 1: Explore Disclosure of Traumatic Childbirth and its Relationship to Symptoms of Postpartum Depression and Childbirth-Specific PTSD

Three-quarters of the sample reported that they disclosed their traumatic childbirth experience (n = 100, 77.5%). Twenty-two participants (17.5%) reported that they had not disclosed. There were no significant differences among demographic, pregnancy, or childbirth characteristics between women who disclosed and those who did not. The proportion of women who disclosed their traumatic childbirth was not different than an estimate of the proportion of women who disclose sexual assault (74.2%; Littleton, 2010; Z = -0.74, p =0.50). However, the proportion of women who disclosed traumatic childbirth was significantly higher than the proportion of women who disclosed childhood sexual abuse (66.5%, Ullman, 2007; Z = -2.08, p = .038).

The frequencies and percentages of reported disclosure methods and targets are summarized in Table 9. Women were able to select multiple methods and targets that applied to their disclosure. Nearly all of disclosing participants reported disclosing in person. Over half reported that they disclosed in an online post, text message, or via telephone. The least common reported disclosure methods were via video chat, email, and letter. Disclosing women most often reported disclosing to individuals with whom they had close, personal relationships, including their partner, a family member, and/or a friend. The next most common targets were a medical provider, online support group, and social media group. One-in-four women reported that they

disclosed to a mental health provider, parenting group, or acquaintance. The least common disclosure targets were religious/spiritual guides and in-person support groups.

Table 9

Disclosure Methods and Targets of Participants Who Disclosed

	n	%
Disclosure method		
In person	90	90.0
Posting message online	65	65.0
Text message	58	58.0
Telephone	54	54.0
Video chat (e.g., Facetime)	10	10.0
Email	8	8.0
Letter	4	4.0
Disclosure target		
Partner	87	87.0
Family member	82	82.0
Friend	81	81.0
Medical provider	43	43.0
Online support group	42	42.0
Social media group	37	37.0
Mental health provider	25	25.0
In-person parenting group	25	25.0
Acquaintance	24	24.0
Religious/spiritual guide	10	10.0
In-person support group	4	4.0

Reasons for disclosing. Disclosing participants responded to an open-ended prompt to identify their reasons for disclosing their traumatic childbirth. Nearly all disclosing participants (n = 92, 92.0%) responded to this item. Three major themes were identified: 1) To cope, 2) To exchange information, 3) To connect with other mothers, and 4) To help others. Frequencies and percentages of themes and subthemes are displayed in Table 10.

To cope. Most disclosing participants reported that they used disclosure as a means of coping with their traumatic childbirth experience. The majority of these responses

Table 10

Themes Identified for Disclosure Reasons among Participants who Disclosed

Theme	*n*	%
To cope	90	90.0
General coping	47	47.0
Emotional support	25	25.0
Need to talk	18	18.0
To exchange information	23	23.0
Inform others	12	12.0
Get information	11	11.0
To connect with other mothers	15	15.0
To help others	9	9.0
Other	6	6.0

referred to general coping (e.g., "to process"), while others specifically noted efforts to seek emotional support from social partners (e.g., "to feel like I wasn't alone") and/or feeling a need to talk about the experience (e.g., "to get it off my chest"). One participant explained that she utilized disclosure as a means of coping, but she shared only certain types of information:

> "I felt like I needed to tell someone what had happened because it was so horrible. Just to get it out there. But I kept it to the facts and framed it more as a crazy story like you tell to entertain someone. I think I was embarrassed to tell how I felt about it - that I felt mistreated and neglected by medical staff, and afraid to potentially have a baby again some time in the future. I'm still really angry at times and lose some sleep thinking about the experience and what I wish had happened differently." (White, age 32, gravida 2, primiparous)

To exchange information. Almost a quarter of disclosing participants reported they used disclosure as a means to give or get information about their childbirth. These reasons included informing family and friends about events that had occurred in childbirth and asking for information to clarify what had occurred during childbirth. One mother reported simply, "They inquired" (White, age 29, primigravida, primiparous). Another participant shared her reasons for providing information to her family, "I had to get it out and also share with loved ones what I went through so they would know and understand" (White, age 46, gravida 3, primiparous).

To connect with other mothers. A smaller subset of disclosing women reported that they disclosed in order to connect with other mothers who had been through a similar experience. One participant reported, "I wanted to know how other mothers with preeclampsia deal with how things went while in labor" (White, age 21, primigravida, primiparous).

To help others. Fewer than 10% of disclosing women reported that they disclosed in order to help other women who had been through or might go through a similar traumatic experience. For some, they had a specific social partner in mind, as demonstrated by this response: "I had a plan about how I wanted my 3rd labor since my second baby was born at 35 weeks and it wasn't as I planned. My sister is expecting her first and I wanted to let her know things sometimes don't happen the way you want them" (White, age 28, gravida 4, para 3). Others noted a more general sense of supporting a community that they now belonged to: "To make other mothers that have been through something similar know that they weren't alone" (White, age 31, gravida 6, para 3).

Other. Other reasons for disclosing included to show gratitude for her healthy baby, to express dissatisfaction with her medical experience, to support mother-infant attachment, to document the experience, to satisfy social pressures to disclose, and simply enjoying talking about her childbirth. Each of these reasons was reported by only one participant.

Reasons for not disclosing. Thirty-four women reported that they wanted to disclose their traumatic childbirth experience but chose not to. Of those who did disclose, 20 (20.0%) reported that they elected not to disclose on some occasions. Of those who had not disclosed, 14 (63.6%) reported that they wanted to disclose but had not. These 34 participants were asked what their reasons were for choosing not to disclose. The majority of these participants provided a response to this item (n = 29, 85.3%). Four themes were identified from participant responses: 1)

Reactions from others, 2) Too difficult to talk about, 3) Lack of support, and 4) Personal choice. Frequencies and percentages of identified themes and subthemes are displayed in Table 11 based on the 34 women who indicated a desire to disclose but chose not to.

Table 11

Themes Identified for Reasons for not Disclosing

Theme	*n*	%
Reactions from others	13	38.2
Anticipated negative judgment	11	32.4
Concern for others	3	8.8
Too difficult to talk about	10	29.4
Lack of support	10	29.4
No one to talk to	5	14.7
No one understands	3	8.8
No one cares	2	5.9
Cannot find professional support	2	5.9
Personal choice	8	23.5
Other	4	11.8

Reactions from others. The most commonly identified theme was concern for the reactions of social partners during disclosure. These responses most often included anticipated negative reactions from the social partner including negative judgment of the participants' choices during birth or reaction to her childbirth experience. Participant 181, who reported that she disclosed on some occasions and chose not to at others, wrote, "Wasn't sure how to adequately express my feelings. [I] also was scared I would cry. Everyone kept saying, 'you're doing so great.' They were trying to be supportive and positive, but I felt if I broke down I would be letting them down or scare them." One mother who also disclosed on some occasions noted that she had previously received a negative reaction during disclosure, which led her to stop disclosing. Three women reported concern for their social partner's well-being. These responses included one participant who chose not to disclose to a woman who was unable to bear children,

and two responses from women who chose not to disclose to others who were currently pregnant in order to avoid scaring them.

Too difficult to talk about. Almost one third of participants reported that they felt unable to disclose their childbirth experience, because it was too difficult to discuss. Participant 232 reported that it was so difficult to talk about that she avoided situations in which she might be asked about her childbirth, "It was difficult to talk about. I avoided social functions because I was scared people were going to ask me about it."

Lack of support. Almost a third of participants indicated they did not disclose due to a lack of support. Several women reported that they did not have a social partner to talk to. Most of these responses were related to feeling as if no one could understand or cared to hear about her experience. Participant 108 reported that she had not disclosed her childbirth, writing, "I felt alone and that no one would understand. I was also a little in shock and felt guilty over my body failing my child and so I did not want others to judge me." Two women reported that they attempted to seek professional help from a mental health provider but were unable to locate a qualified provider or were unable to secure an appointment with a qualified provider.

Personal choice. A smaller subset of non-disclosing participants reported that they did not disclose due to personal choice. These responses included not disclosing because there was no need to, they wanted to move on from the experience, or they did not tend to seek social support. One participant (White, age 33, primigravida, primiparous) wrote, "After such a hard time I just wanted to enjoy my blessing and take on the challenge of becoming a new mom head on ... the past was in the past and I didn't want to relive the pain." One women reported that she did not disclose, because she did not think it would be helpful in her coping.

Other. There were four other reasons for not disclosing that did not align with any of the identified themes. These responses included not having time (n = 1), having a conflict of interest (i.e., the medical provider was a relative, n = 1), and choosing not to disclose to social partners with whom she did not have a close relationship (n = 2).

Relationships with postpartum psychological distress. Differences in prior trauma exposure and symptoms of PTSD and depression were examined between disclosure groups. A large portion of the starting sample exited the survey before viewing these survey items (n = 56, 43.4%). Participants who continued participation were more likely to have had at least one childbirth complication (90.4%) than those who exited the survey (75.0%), $X^2(1) = 5.52$, p = .019. There were no other significant differences in demographic, pregnancy, or childbirth characteristics between those who did and did not exit the survey. Disclosers were no more likely to exit the survey than non-disclosers. Descriptive statistics for the prior trauma, depression, and PTSD measures in the total sample are displayed in Table 12.

Table 12

Descriptive Statistics of Prior Trauma, Depression Symptom, and PTSD Symptom Measures in the Total Sample

	n	Range	*M*	*SD*	Skewness	Kurtosis
Prior trauma	53	0 – 6	2.23	1.85	0.51	0.65
Depression	60	0 – 28	11.50	7.53	0.50	-0.61
PTSD total	61	0 – 76	25.74	19.33	0.69	-0.32
Cluster B	65	0 – 20	5.62	5.59	0.99	0.10
Cluster C	65	0 – 8	2.38	2.42	0.79	-0.35
Cluster D	65	0 – 27	9.77	7.65	0.57	-0.72
Cluster E	64	0 – 24	8.38	6.65	0.47	-0.83

Note: Cluster B: Intrusion; Cluster C: Avoidance; Cluster D: Negative alterations in cognition and mood; Cluster E: Alterations in arousal and reactivity

Prior trauma. Forty participants reported being exposed to at least one potentially traumatic event prior to pregnancy. Participants most commonly reported verbal abuse (n = 29),

followed by rape (n = 19) and sexual assault (n = 17). Women who had at least a 4-year college degree reported fewer prior traumatic experiences (n = 20, M = 1.50, SD = 1.7) than women without at least a 4-year degree (n = 32, M = 2.69, SD = 1.89), $t(50) = 2.35$, $p = .023$. Women who were primigravida reported fewer prior traumatic experiences (n = 19, M = 1.53, SD = 1.84) than multigravida women (n = 32, M = 2.66, SD = 1.79), $t(49) = 2.16$, $p = .036$. Finally, women who reported a history of at least one psychiatric diagnosis prior to pregnancy (n = 21, M = 3.05, SD = 1.83) reported more prior traumatic experiences than women without a psychiatric history (n = 31, M = 1.38, SD = 1.68), $t(50) = 2.78$, $p = .008$.

Postpartum depression symptoms. Twenty-five participants scored above the clinical cutoff (13) for depression on the EPDS. The majority of participants (n = 43) denied suicidal ideation (i.e., selected "never") in the week prior to study participation, but 17 reported experiencing some suicidal ideation in the prior week. Women with at least a 4-year college degree scored lower (n = 22, M = 8.45, SD = 5.45) than those without a 4-year college degree (n = 38, M = 13.26, SD = 8.05), $t(26.45) = 2.75$, $p = .008$. Women with a history of at least one psychiatric diagnosis prior to pregnancy scored higher (n = 27, M = 13.78. SD = 7.87) than those without a psychiatric history (n = 33, M = 9.64, SD = 6.80), $t(58) = 2.19$, $p = .033$. Women scored higher if they had at least one pregnancy complication (n = 43, M =13.12, SD = 7.43) compared with women who reported an uncomplicated pregnancy (n = 17, M = 7.41, SD = 6.28), $t(58) = 2.79$, $p = .007$. Women who reported that they and/or their baby had a lasting health problem also scored higher (n = 23, M = 14.78, SD = 9.30) than those who reported no lasting health problems (n = 37, M = 9.46, SD = 5.37), $t(31.26) = 2.50$, $p = .018$. Total EPDS score was significantly correlated with number of prior traumatic experiences ($r = .56$, $p < .001$).

Childbirth-specific PTSD symptoms. Twenty-two participants scored above the clinical cutoff of 33 on the PCL-5. PTSD score was significantly negatively correlated with participant age (r = -.38, p = .002). Women with at least a 4-year college degree scored lower (n = 24, M = 18.54, SD = 15.41) than women without a 4-year degree (n = 37, M = 30.41, SD = 20.34), $t(59)$ = 2.44, p = .018. Women who were primigravida also scored lower (n = 38, M = 19.59 SD = 17.00) than multigravida women (n = 22, M = 29.76, SD = 19.85), $t(58)$ = 2.01, p = .049. Women who reported that they and/or their infant had a lasting health problem from childbirth scored higher (n = 23, M = 34.70, SD = 22.01) than those who reported no lasting health problems (n = 38, M = 20.32, SD = 15.42), $t(35.17)$ = 2.75, p = .009. PTSD severity was significantly correlated with prior trauma (r = .41, p = .004) and depression symptoms (r = .83, p < .001).

Hypothesis 1: Women who disclosed will have fewer postpartum depression symptoms. An ANCOVA was utilized to test the hypothesis that women who disclosed would have lower postpartum depressive symptomology than women who did not disclose. Due to the high proportion of disclosers in the sample and the high proportion of participants who exited the survey early, the ANCOVA included 40 participants who had disclosed and 9 who had not. Thus, results of this analysis should be interpreted with caution due to the small sample size. Disclosure/non-disclosure was the fixed-factor and EPDS score was the outcome variable. Covariates included total SLESQ score, having at least a 4-year degree, having a history of psychiatric problems prior to pregnancy, and having at least one pregnancy complication. Results indicated that there was no difference in EPDS score between those who disclosed (n = 40, M = 10.68, SD = 6.61) and those who did not (n = 9, M = 10.89, SD = 8.98), $F(1,46)$ = .096, p = .757, η^2 = .02.

Hypothesis 2: Women who disclosed will have fewer childbirth-specific PTSD symptoms. An ANCOVA was also utilized to test the hypothesis that women who disclosed would have lower childbirth-specific PTSD symptomology than those who did not. This analysis included 39 disclosers and 9 non-disclosers. Thus, results of this analysis should be interpreted with caution due to the small sample size. Disclosure/non-disclosure was the fixed-factor and PCL-5 score was the outcome variable. Covariates included SLESQ total score, participant age, having at least a 4-year degree, and being primigravida. Results indicated that PCL-5 score did not significantly differ between those who disclosed (n = 39, M = 24.72, SD = 18.91) and those who did not (n = 9, M = 33.67, SD = 25.23), $F(1,41) = 1.30$, $p = .262$, $\eta^2 = .03$.

Specific Aim 2: Explore Social Responses to Traumatic Childbirth Disclosure

Positive social responses to disclosure. The positive reactions subscales from the SRQ of Emotional Support/Belief and Tangible Aid/Information were examined to describe positive social responses to disclosure. Only participants who reported that they had disclosed responded to these items. Of the participants who indicated disclosing, 71 (71.0%) completed the SRQ. Scores on the two subscales were positively correlated, $r = .43$, $p < .001$.

Emotional Support/Belief. The mean score on the Emotional Support/Belief subscale was 2.23 (SD = .74). Participants who were employed scored higher on this subscale (M = 2.39, SD = .73) than unemployed women (M = 2.04, SD = .73), $t(68) = 1.98$, $p = .052$. Participants who were primigravida scored higher (M = 2.46, SD = .69) than multigravida women (M = 2.03, SD = .74), $t(68) = 2.49$, $p = .015$. The mean score was also negatively correlated with the baby's birthweight ($r = -.36$, $p = .002$). Taken together, participants reported greater emotional support if they were employed, this was their first pregnancy, and their baby was born at lower birth weight. There were no other associations between Emotional Support/Belief subscale score and

any demographic, pregnancy/childbirth, or disclosure characteristics. Score on this subscale was not significantly correlated with depressive (r = -.14, p = .348) or PTSD (r = -.15, p = .336) symptoms.

Tangible Aid/Information. The mean score on the Tangible Aid/Information subscale was 4.15, (SD = 3.99). Women who were married scored lower (M = .67, SD = .66) than unmarried women (M = 1.35, SD = .98), $t(69) = 3.30$, p = .002, and college-educated women scored lower (M = .57, SD = .59) than women without a college education (M = 1.06, SD = .89), $t(68) = 2.68$, p = .009. In other words, participants who were unmarried and had less than a 4-year college degree received more support in the form of tangible aid and information. Score on this subscale was not significantly correlated with depressive (r = .17, p = .236) or PTSD (r = .17, p = .253) symptoms.

Negative social responses to disclosure. The 24 items of the USII and the eight additional negative social response items from the SRQ (2 items each from the Treat Differently, Take Control, Egocentric, and Distracting subscales) were factor analyzed using principal component analysis with an orthogonal rotation. The analysis yielded seven factors with eigenvalues above 1 explaining a total of 72.6% of the variance for the entire set of items. Rotated factor loadings for each item that were above .40 are displayed in Table 14. All items loaded at least .40 on at least one factor. Five items were removed, because they loaded onto multiple factors at a loading of .40 or higher. Based on these criteria, 19 of the original USII items were retained along with all eight of the SRQ items that were included.

The factor analyzed version of the traumatic childbirth USII included 27 items, 19 of which were from the original 24-item USII and all 8 additional SRQ items included. Descriptive statistics and Cronbach's alphas for each factor and the total traumatic childbirth USII are

displayed in Table 13. Demographic, pregnancy, and childbirth characteristics were explored in relation to the traumatic childbirth USII and its subscales.

Total USII score was lower for women who had at least a 4-year degree [n = 33, M = .94, SD = .44; n = 35, M = 1.39, SD = .77; t(66) = 2.98, p = .004] and/or were employed [n = 37, M = 1.01. SD = .67; n = 31, M = 1.36, SD = .62, t(66) = 2.22, p = .020]. The baby's age at time of participant was also positively correlated with USII score (r = .28, p = .021). Women who were primigravida scored lower [n = 33, M = .92. SD = .59\; n = 35, M = 1.41, SD = .65; t(66) = 3.20, p = .002]. Women who were primiparous also scored lower [n = 45, M = 1.04. SD = .65; n = 23, M = 1.43, SD = .63, t(66) = 2.32, p = .023]. Women who reported a lasting maternal/infant health problem scored higher [n = 24, M = 1.47. SD = .65; n = 44, M = 1.01, SD = .62), t(66) = 2.84, p = .006]. Total score was significantly negatively correlated with Emotional Support/Belief scores (r = -.37, p = .002) but not Tangible Aid/Information scores (r = .06, p = .632).

Table 13

USII-TC Factor and Total Descriptive Statistics, Cronbach's Alphas

	n	Range	*M*	*SD*	Skewness	Kurtosis	alpha
USII total score	68	.00 – 3.07	1.17	0.66	0.53	0.11	.92
Factor 1: Distancing	77	.00 – 3.75	1.45	1.00	0.23	-0.78	.92
Factor 2: Blaming	78	.00 – 4.00	0.52	0.83	2.15	4.75	.86
Factor 3: Minimizing	79	.00 – 4.00	1.87	1.07	-0.10	-0.68	.82
Factor 4: Take Control	72	.00 – 3.00	1.04	0.80	0.77	-0.08	.74
Factor 5: Distraction	72	.00 – 4.00	0.78	1.07	1.11	0.25	.80
Factor 6: Treat Differently	71	.00 – 4.00	0.83	1.04	1.12	0.43	.75
Factor 7: Egocentric	72	.00 – 3.00	0.57	0.81	1.24	0.41	.66

Factor 1, Distancing, included five items from the USII Distancing subscale and three items from the USII Bumbling subscale. These items related to a social partner seeming uninterested in or unable to engage in conversation about the childbirth experience. Women who were employed scored lower on this factor (n = 45, M = 1.21. SD = .98) than those who were not

Table 14

Rotated Factor Loadings for USII and SRQ Negative Social Response Items

	Factor						
	1	2	3	4	5	6	7
Factor 1: Distancing							
USII 3, Distancing: Changed the subject before I wanted to	.874						
USII 9, Bumbling: From voice tone, expression, or body language, I got the feeling he or she was uncomfortable talking about it	.824						
USII 5, Distancing: When I was talking about it, person didn't give me enough time or made me feel like I should hurry	.802						
USII 7, Bumbling: Did not seem to know what to say, or seemed afraid of saying or doing the "wrong" thing	.763						
USII 4, Distancing: Refused to provide the type of help or support I was asking for	.668						
USII 2, Distancing: Refused to take me seriously	.656						
USII 8, Bumbling: Seemed to be telling me what her or she thought I wanted to hear	.649						
USII 1, Distancing: Did not seem to want to hear about it	.564						
Factor 2: Blaming							
USII 23, Blaming: "I told you so" or similar comment		.809					
USII 21, Blaming: Told me that I had gotten myself into the situation in the first place, and now must deal with the consequences		.791					
USII 22, Blaming: Blaming me, trying to make me feel responsible for the experience		.776					
USII 24, Blaming: Seemed disappointed in me		.539					
Factor 3: Minimizing							
USII 14, Minimizing: Told me to be strong, to keep my chin up, or that I should not let it bother me			.745				
USII 17, Minimizing: Said I should look on the bright side			.676				
USII 15, Minimizing: Felt that I should focus on the present or the future and that I should forget about what has happened and move on with my life			.553				
USII 19, Blaming: Asked "why" questions about my role in childbirth			.537				

	Factor						
	1	2	3	4	5	6	7
Factor 4: Take control							
USII 12, Bumbling: Did things for me that I wanted to do and could have done myself				.861			
USII 11, Bumbling: Responded with uninvited physical touching (e.g., hugging)				.637			
SRQ, Take Control: Tried to take control of what you did/decisions you made				.525			
USII 10, Bumbling: Tried to cheer me up when I was not ready to				.445			
SRQ, Take Control: Made decisions or did thinks for you				.398			
Factor 5: Distraction							
SRQ, Distraction: Told you to stop talking about it					.629		
SRQ, Distraction: Told you to stop thinking about it					.583		
Factor 6: Treat Differently							
SRQ, Treat Differently: Treated you differently in some way than before you told him/her that made them feel uncomfortable						.656	
SRQ, Treat Differently: Acted as if you were damaged goods or somehow different now						.656	
Factor 7: Egocentric							
SRQ, Egocentric: Expressed so much anger at physicians or medical staff that you had to calm him/her down							.708
SRQ, Egocentric: Said he/she feels personally wronged by your experience							.706
Eigenvalue	11.97	3.07	2.34	1.71	1.54	1.33	1.22
% Total variance	37.41	9.61	7.42	5.35	4.80	4.16	3.81
Removed items							
USII 6, Distancing: Discouraged me from expressing feelings such as anger, hurt, or sadness	.587		.420				
USII 13, Minimizing: Felt that I should stop worrying about the experience and just forget about it	.556		.479		.410		
USII 16, Minimizing: Felt that it could have been worse or was not as bad as I thought	.405		.513				
USII 18, Minimizing: Felt that I was overreacting	.444	.442					
USII 20, Blaming: Made “should or shouldn’t have” comments about my role in childbirth		.517	.476				

Employed (n = 32, M = 1.80, SD = .94), t(66) = 2.69, p = .009. Primigravida women also scored lower (n = 36, M = 1.09, SD = .89) than multigravida participants (n = 40, M = 1.78, SD = 1.01), t(74) = 3.19, p = .002. Participants scored higher if they had a psychiatric diagnosis prior to pregnancy [n = 33, M = 1.74, SD = 1.06); n = 44, M = 1.24, SD = .91; t(75) = 2.24, p =.028] and/or reported a lasting maternal-infant health problem [n = 29, M = 1.89. SD = .93; n = 49, M = .43, SD = .68, t(75) = 3.11, p = .003].

Factor 2, Blaming, included four items from the USII Blaming subscale related to blaming the individual for their role in the difficult childbirth experience. Participants scored lower on this factor if they had at least a 4-year degree (n = 37, M = .30. SD = .49) compared with participants who had below a 4-year degree (n = 41, M = .72, SD = 1.00), t(76) = 2.32, p = .023. The baby's age at time of study participants was positively correlated with this factor score (r = .29, p = .009).

Factor 3, Minimizing, included three items from the USII Minimizing subscale and one item from the USII Blaming subscale. These items related to reducing the importance or the seriousness of the childbirth and/or the participant's reaction to childbirth. Participants scored lower on this subscale if they had at least a 4-year college degree (n = 37, M =1.59. SD = .98) than women without at least a 4-year degree (n = 42, M = 2.11, SD = 1.09), t(77) = 2.24, p = .028. Women who were primigravida also scored lower (n =37, M = 1.58. SD = 1.10) than multigravida women (n = 41, M = 2.13, SD = .98), t(76) = 2.38, p = .020.

Factor 4, Take Control, included three items from the USII Bumbling subscale and the two SRQ Take Control items. These items related to the social partner responding to disclosure by taking control of the situation by doing things without being asked or seeming to force an emotional response from the participant. Participants who reported having had at least one

pregnancy complication scored higher (n = 50, M = 1.18. SD = .82) than those without pregnancy complications (n = 22, M = .74, SD = .65), $t(70) = 2.24$, p = .028.

The items from the Distraction (i.e., the social partner directed attention away from the disclosed event), Treat Differently (i.e., the social partner provided a stigmatizing response), and Egocentric (i.e., the social partner focused on their own reactions) SRQ subscales each loaded onto separate factors (Factors 5, 6, and 7). Participants scored lower on the Distraction factor if they had at least a 4-year degree [n = 33, M = .35. SD = .72; n = 39, M = 1.15, SD = 1.18, $t(70) = 3.42$, p = .001], were employed [n = 40, M = .44. SD = .90; n = 32, M = 1.22, SD = 1.11, $t(70) = 3.29$, p = .002], were primigravida [n = 34, M = .32 SD = .67; n = 37, M = 1.21, SD = 1.20, $t(57.38) = 3.84$, $p < .001$], and/or were primiparous [n = 47, M = .53. SD = .91; n = 24, M = 1.27, SD = 1.22, $t(36.59) = 2.63$, p = .013]. Score on the Treat Differently factor was negatively correlated with participant age (r = -.25, p = .04), and participants who reported a lasting health problem scored higher [n = 26, M = 1.23. SD = 1.19; n = 45, M = .60, SD = .87, $t(40.53) = 2.36$, p = .023]. Participants scored lower on the Egocentric factor if they were employed [n = 40, M = .33 SD = .59; n = 32, M = .88, SD = .93, $t(70) = 3.04$, p = .003]. Finally, participants scored higher on the Egocentric factor if they reported a lasting maternal or infant health problem [n = 27, M = .94. SD = .96; n = 45, M = .34, SD = .60, $t(38.32) = 2.91$, p = .006].

Other types of support. All participants were asked to describe other types of support related to childbirth that were not captured by the USII and SRQ subscales. First, they were asked to describe "anything else that someone has said or done related to your childbirth experience that was helpful or comforting" to capture other types of positive support. They were then asked to describe "anything else that someone has said or done related to your childbirth experience that was annoying, upsetting, made you angry, or rubbed you the wrong way" to

capture other types of negative support. Finally, they were asked to describe "anything else you wish someone would have done or said to you to help you with your childbirth experience" to capture support that participants wanted or thought would be helpful, but they did not actually receive.

Other types of positive support. Forty-one participants provided a response to this open-ended item. Two major themes were identified in participant responses: 1) Emotional support, and 2) Specific and tangible support. Frequencies and percentages of responses within these themes are displayed in Table 15. The majority of the responses to this item included mention of appreciation for emotional support. Several participants specifically mentioned having someone listen to their story, normalizing their emotional response to their childbirth experience, and/or reframing the experience. Responses referring to specific and tangible support included helping with meals and rides to the hospital. Other responses that did not align with these two themes included getting advice on how to care for her premature baby (n = 1) and being able to trust the medical staff in the NICU (n = 2).

Table 15

Themes Identified for Other Types of Support – Positive

Theme	*n*	%
Emotional support	30	73.2
Provided support	19	46.3
Listening	7	22.6
Normalizing	5	12.2
Reframing	1	2.4
Specific and tangible support	6	14.6
Other	3	7.3

Other types of negative support. Fifty-two participants provided a response to this open-ended item. Five major themes were identified: 1) Minimizing, 2) Personal negative comments,

3) Dismissing mom's needs, 4) Blaming, and 5) Lack of support. Frequencies and percentages of responses within each theme and their respective subthemes are displayed in Table 16. Minimizing included subthemes of other women comparing their childbirth experience to the participant's, even though their experience was much different (e.g., comparing a full term birth to a preterm birth). Personal negative comments included comments about the participant's personal characteristics (e.g., young age, that she was not smiling, that she had too many children). The theme of dismissing the mother's needs included questions about the baby's health status, not seeming to listen to the participant when she was speaking, the social partner focusing on their personal problems, and others seeming to talk about her as if she was not there. Several participants also noted a lack of support from various sources, including their medical provider, baby's father, and family members.

Table 16

Themes Identified for Other Types of Support – Negative

Theme	*n*	%
Minimizing	12	23.1
Comparing	6	11.4
Prioritizing the baby	5	9.6
Congratulating	1	1.9
Personal negative comments	15	28.8
Dismissing mom's needs	5	9.6
Asking for the baby's status	2	3.8
Not listening	2	3.8
Focusing on themselves	2	3.8
Talking around her	1	1.9
Blaming	7	13.5
Blaming	5	9.6
Needing to explain choices	2	3.8
Lack of support	8	15.4
Lack of support – medical	5	9.6
Lack of support – baby's father	2	3.8
Lack of support – family	1	1.9
Other	3	5.8

Other types of support wanted, but not received. Fifty-two participants provided a response to this open-ended item. Four major themes were identified: 1) Postpartum support, 2) Support from medical professionals, 3) Reflections on events occurring during birth, and 4) Better understanding. Frequencies and percentages of responses within each theme and their respective subthemes are displayed in Table 17. Over 40% of women reported that they wanted more postpartum support in the form of emotional support, tangible aid, and peer, family, and partner support. Similarly, a subset of women stated that they wanted better support from their medical team during their pregnancy, childbirth, and postpartum experience. Several women also noted a desire for a better understanding of the events that occurred during birth, better preparation for the possible complications of childbirth, and more emotional support during birth. Two women noted that they wished they had been more open to the possibilities of complications occurring during pregnancy and childbirth, and two women reported that they wanted an advocate during childbirth.

Table 17

Themes Identified for Other Types of Support – Wanted but not Received

Theme	*n*	%
Postpartum support	21	40.4
Emotional support after birth	14	26.9
Show concern for mom	5	9.6
Peer support	3	5.8
Tangible aid/information	2	3.8
Acknowledgement	1	1.9
Family/partner support	1	1.9
Support from medical professionals	9	17.3
Events occurring during birth	8	15.4
Prior knowledge of risks	5	9.6
Emotional support during birth	2	3.8
Being more open	2	3.8
Advocacy	2	3.8
Understanding of events	4	7.7
Other	3	5.8

Specific Aim 3: Examine Relationships between Negative Social Responses to Disclosure and Postpartum Depression and Childbirth-Specific PTSD Symptoms

Hypothesis 3: Unsupportive responses to disclosure will be positively related to postpartum depression. Linear regression was utilized to test the hypothesis that unsupportive responses to traumatic childbirth disclosure would be significantly, positively related to postpartum depressive symptoms. USII-TC score was the predictor of interest and EPDS score was the criterion variable. In the first step of this two-step regression model, the following predictors were included: total prior trauma exposure and demographic, pregnancy and childbirth characteristics that demonstrated significant relationships with EPDS score in earlier analyses, including having at least a 4-year degree, having a history of psychiatric diagnosis, and having at least one pregnancy complication. In the second step, USII-TC total score was added as a predictor. Results are displayed in Table 18.

Table 18

Unsupportive Responses to Disclosure and Depression Symptoms: Linear Regression

	Standardized β	*t*	*p*
Step One:			
Prior trauma	.44	3.16	.003
4-year degree	-.09	0.71	.484
History of psychiatric problem(s)	.29	2.12	.041
Pregnancy complication(s)	.11	0.84	.407
Full Model: $F(4,35) = 7.27$, $p = <.001$ with $R^2 = .39$			
Step Two:			
Prior trauma	.31	2.34	.025
4-year degree	-.02	0.16	.879
History of psychiatric problem(s)	.16	1.21	.236
Pregnancy complication(s)	.12	1.04	.306
Unsupportive responses	.41	2.88	.007
Full Model: $F(5,34) = 8.69$, $p = <.001$ with $R^2 = .50$, $\Delta R^2 = .11$, $\Delta F = 8.28$, $p = .007$			

Note: $n = 40$. Regressions performed using simultaneous entry. R^2 reported above are adjusted R^2.

In the first step, the model was significant, with participant historical characteristics explaining 39% of the variance in postpartum depression scores. Prior trauma exposure was the strongest predictor, and having a historical psychiatric problem was also a significant predictor of depressive symptoms. In step two, the full model was significant, and the addition of unsupportive social responses to disclosure significantly increased the amount of the variance explained to 50%. The USII-TC was a significant predictor of greater severity of depressive symptoms. Prior trauma also remained a significant predictor. These results support hypothesis 3.

Hypothesis 4: Unsupportive responses to disclosure will positively relate to childbirth-specific PTSD. Linear regression was utilized to test the hypothesis that unsupportive responses to traumatic childbirth disclosure would be significantly, positively related to childbirth-specific PTSD symptoms. USII-TC score was the predictor of interest and PCL-5 score was the criterion variable. In the first step of this two-step regression model, the following predictors were included: total prior trauma exposure, and demographic, pregnancy and childbirth characteristics that demonstrated significant relationships with PCL-5 score in earlier analyses, including having at least a 4-year degree, participant age, and being primigravida. In the second step, USII-TC total score was added as a predictor. Results are displayed in Table 19.

In the first step, the model was significant, with participant historical characteristics explaining 31% of the variance in childbirth-specific PTSD scores. Participant age was the only significant predictor, with younger participants reporting more severe PTSD symptoms. In the second step, the model was significant, and the addition of unsupportive social responses to disclosure significantly increased the amount of the variance explained to 51%. The USII-TC

was the only significant predictor of childbirth-specific PTSD symptom severity in the full model. These results support hypothesis 4.

Table 19

Unsupportive Responses to Disclosure and PTSD Symptoms: Linear Regression

	Standardized β	*T*	*P*
Step One:			
Prior trauma	.30	1.76	.089
4-year degree	-.02	0.11	.917
Participant age	-.43	2.83	.008
Primigravida	-.19	1.13	.268
Full Model: $F(4,31) = 4.84$, $p = .004$ with $R^2 = .31$			
Step Two:			
Prior trauma	.25	1.75	.091
4-year degree	.04	0.33	.745
Participant age	-.26	1.88	.070
Primigravida	.07	0.46	.647
Unsupportive responses	.57	3.70	.001
Full Model: $F(5,30) = 8.19$, $p < .001$ with $R^2 = .51$, $\Delta R^2 = .19$, $\Delta F = 13.68$, $p = .001$			

Note: $n = 36$. Regressions performed using simultaneous entry. R^2 reported above are adjusted R^2.

Specific Aim 4: Examine a Model in which Maladaptive Coping and Posttraumatic Cognitions are Mediators of the Relationship between Unsupportive Responses to Disclosure and Symptoms of Postpartum Depression and Childbirth-specific PTSD.

Maladaptive coping. Descriptive statistics were examined for maladaptive coping as measured by the CSI Disengagement subscales (see Table 20). Higher scores on this measure were indicative of greater use of maladaptive coping strategies. The subscale with the highest score was Wishful Thinking, followed by Social Withdrawal, Self-Criticism, and Problem Avoidance. Women who had at least a 4-year college degree scored lower ($n = 26$, $M = 37.31$, $SD = 13.54$) than women without a 4-year degree ($n = 43$, $M = 49.09$, $SD = 16.81$), $t(67) = 3.03$, $p = .004$. Use of maladaptive coping was negatively correlated with participant age ($r = -.31$, $p =$

.008). Women who had at least one psychiatric diagnosis prior to pregnancy scored higher (n = 32, M = 49.06, SD = 17.19) than women without a psychiatric history (n = 37, M = 40.84, SD = 15.26), $t(67) = 2.11$, p = .039. Prior trauma exposure was also significantly positively correlated with maladaptive coping (r = .41, p = .002). With regards to pregnancy and childbirth characteristics, women who were primigravida at the time of participation scored lower (n = 25, M = 37.60, SD = 16.67) than multigravida women (n = 42, M = 49.83, SD = 14.65), $t(65) = 3.14$, p = .003. Finally, women who reported that they and/or their infant had a lasting health problem resulting from childbirth scored higher (n = 27, M = 53.00, SD = 17.63) than women who reported no lasting health problems (n = 42, M = 39.29, SD = 13.56), $t(67) = 3.64$, p = .001. Maladaptive coping was significantly negatively correlated with Emotional Support/Belief (r = -.5, p = .011) but not Tangible Aid/Information (r = .17, p = .206).

Table 20

Coping Strategies: Descriptive Statistics

	n	Range	*M*	*SD*	Skewness	Kurtosis
Coping	69	16.00 – 77.00	44.65	16.59	0.24	-0.91
Coping: PA	69	4.00 – 20.00	9.64	4.47	0.40	-0.93
Coping: WT	69	4.00 – 20.00	13.09	4.68	-0.15	-1.12
Coping: SC	69	4.00 – 20.00	10.62	5.58	0.39	-1.17
Coping: SW	69	4.00 – 20.00	11.30	5.87	0.16	-1.15

Note: PA: Problem Avoidance; WT: Wishful Thinking; SC: Self Criticism; SW: Social Withdrawal

Hypothesis 5: Unsupportive responses to disclosure will be positively related to maladaptive coping. Linear regression was employed to evaluate the hypothesis that unsupportive responses to traumatic childbirth disclosure would be significantly, positively related to maladaptive coping with traumatic childbirth. USII-TC score was the predictor of interest and CSI Disengagement score was the criterion variable. A three-step linear regression was utilized. In the first step, the covariates of prior trauma, having at least a 4-year degree,

participant age, psychiatric history, and being primigravida were included as predictors. In the second step, positive social reactions of Emotional Support/Belief were added to the model. The USII-TC score was added as a predictor in the third step. Results are displayed in Table 21.

Table 21

Unsupportive Responses to Disclosure and Maladaptive Coping: Linear Regression

	Standardized β	*t*	*p*
Step One:			
Prior trauma	.26	1.77	.086
4-year degree	.01	0.07	.948
History of psychiatric problem(s)	.26	1.90	.066
Participant age	-.39	2.83	.008
Primigravida	-.26	1.89	.067
Full Model: $F(5,33) = 6.31$, $p = <.001$ with $R^2 = .41$			
Step Two:			
Prior trauma	.16	1.01	.318
4-year degree	-.04	0.30	.770
History of psychiatric problem(s)	.25	1.82	.078
Participant age	-.40	2.91	.006
Primigravida	-.21	1.54	.133
SRQ Emotional Support/Belief	-.20	1.27	.215
Full Model: $F(7,32) = 5.62$, $p = <.001$ with $R^2 = .42$, $\Delta R^2 = .02$, $\Delta F = 1.60$, $p = .215$			
Step Three:			
Prior trauma	.15	1.01	.320
4-year degree	.05	0.35	.730
History of psychiatric problem(s)	.12	0.92	.364
Participant age	-.25	1.90	.067
Primigravida	-.16	1.22	.231
SRQ Emotional Support/Belief	-.03	0.23	.824
Unsupportive responses	.46	2.80	.009
Full Model: $F(7,31) = 6.97$, $p = <.001$ with $R^2 = .52$, $\Delta R^2 = .10$, $\Delta F = 7.84$, $p = .009$			

Note: $n = 39$. Regressions performed using simultaneous entry. R^2 reported above are adjusted R^2.

In the first step, the model was significant, with participant characteristics explaining 41% of the variance in maladaptive coping. Participant age was the only significant predictor, with younger women reporting more maladaptive coping. In the second step, Emotional Support/Belief did not significantly add to the model. Age remained a significant negative

predictor of maladaptive coping. The final model was significant, and the addition of unsupportive social interactions significantly increased the amount of variance explained to 52%. Age was no longer a significant predictor of maladaptive coping. These results support hypothesis 5.

Hypothesis 7: Maladaptive coping will be positively related to postpartum depression symptoms. Linear regression was again employed to evaluate the hypothesis that maladaptive coping with traumatic childbirth would be significantly, positively related to postpartum depressive symptoms. The predictor of interest was CSI Disengagement score and the criterion variable was EPDS score. In step one, the following covariates were included as predictors: prior trauma, and demographic, pregnancy and childbirth variables that demonstrated significant relationships with depression, including prior trauma, 4-year degree, psychiatric history, and having at least one pregnancy complication. Maladaptive coping was entered as a predictor in the second step. Results are displayed in Table 22.

In the first step, the model was significant and participant characteristics explained 33% of the variance in depression scores, with prior trauma exposure and psychiatric history being significantly positive contributors to EPDS score. In step two, the model was significant, and the addition of maladaptive coping contributed to a significant increase in the total variance explained to 65%. Maladaptive coping was the strongest significant predictor of depressive symptoms, but prior trauma and having pregnancy complication(s) were also significant predictors. These results support hypothesis 7.

Table 22

Maladaptive Coping and Depression Symptoms: Linear Regression

	Standardized β	*t*	*p*
Step One:			
Prior trauma	.43	3.35	.002
4-year degree	-.05	0.37	.711
History of psychiatric problem(s)	.19	1.54	.129
Pregnancy complication(s)	.19	1.61	.115
Full Model: $F(4,47) = 7.16$, $p < .001$ with $R^2 = .33$			
Step Two:			
Prior trauma	.23	2.35	.023
4-year degree	.04	0.45	.656
History of psychiatric problem(s)	.12	1.26	.214
Pregnancy complication(s)	.21	2.45	.018
Maladaptive coping	.62	6.63	<.001
Full Model: $F(5,46) = 19.75$, $p = <.001$ with $R^2 = .65$, $\Delta R^2 = .30$, $\Delta F = 43.96$, $p < .001$			

Note: $n = 52$. Regressions performed using simultaneous entry. R^2 reported above are adjusted R^2.

Hypothesis 8: Maladaptive coping will be positively related to childbirth-specific PTSD symptoms. Linear regression was again employed to evaluate the hypothesis that maladaptive coping with traumatic childbirth would be significantly, positively related to childbirth-specific PTSD. CSI Disengagement score was the predictor of interest, and PCL-5 score was the criterion variable. Participant characteristics of prior trauma, having at least a 4-year college degree, age, and being primigravida were entered in step one as covariates. Step two included the addition of maladaptive coping. Results are displayed in Table 23.

In the first step, the model was significant, with participant characteristics explaining a significant proportion of the variance (35%). Prior trauma exposure and participant age was a significant predictor of PTSD symptoms, with younger age being related to more severe symptoms. In the final step, the model was significant, and maladaptive coping was a significant predictor of PTSD, such that more utilization of maladaptive coping strategies related to more

severe PTSD symptoms. Prior trauma remained a significant predictor, but participant age was no longer significant. The full model explained just over 66% of the variance explained in PTSD symptoms. These results show support for hypothesis 8.

Table 23

Maladaptive Coping and PTSD Symptoms: Linear Regression

	Standardized β	*t*	*p*
Step One:			
Prior trauma	.29	2.15	.037
4-year degree	-.03	0.21	.839
Participant age	-.46	3.67	.001
Primigravida	-.21	1.67	.124
Full Model: $F(4,42) = 7.12$, $p < .001$ with $R^2 = .35$			
Step Two:			
Prior trauma	.25	2.55	.015
4-year degree	-.01	0.15	.885
Participant age	-.12	1.10	.279
Primigravida	.18	1.63	.111
Maladaptive coping	.75	6.31	<.001
Full Model: $F(5,41) = 18.92$, $p = <.001$ with $R^2 = .66$, $\Delta R^2 = .29$, $\Delta F = 39.81$, $p < .001$			

Note: $n = 47$. Regressions performed using simultaneous entry. R^2 reported above are adjusted R^2.

Posttraumatic cognitions. Descriptive statistics were also examined for posttraumatic cognitions as measured by the PTCI (see Table 24). Participants reported the strongest posttraumatic cognitions related to the World, followed by the Self, and then Self Blame. Women who had at least a 4-year college degree scored lower on the PTCI ($n = 22$, $M = 72.05$, $SD = 42.61$) than women without a 4-year college degree ($n = 45$, $M = 95.80$, $SD = 44.89$), $t(65) = 2.07$, $p = .043$. Women also scored lower if they were employed ($n = 35$, $M = 71.91$, $SD = 36.96$) compared with unemployed women ($n = 32$, $M = 105.59$, $SD = 47.43$), $t(67) = 3.26$, $p = .002$. Participant age was negatively correlated with posttraumatic cognitions ($r = -.31$, $p = .011$). Prior trauma exposure was significantly positively correlated with posttraumatic cognitions ($r =$

.49, $p = .001$). There was no difference in PTCI score between women who disclosed ($n = 55$, $M = 87.25$, $SD = 46.29$) and those who did not ($n = 12$, $M = 91.42$, $SD = 41.87$), $t\ (65) = .29$, $p = .775$. Maladaptive coping and posttraumatic cognitions were strongly, positively correlated with each other ($r = .78$, $p < .001$). Neither Emotional Support/Belief ($r = -.26$, $p = .061$) nor Tangible Aid/Information ($r = .14$, $p = .298$) were related to posttraumatic cognitions.

Table 24

Descriptive Statistics for the Posttraumatic Cognitions Inventory

	n	Range	*M*	*SD*	Skewness	Kurtosis
Posttraumatic cognitions	67	33.00 – 206.00	88.00	45.25	0.66	-0.47
PTCI: Self Blame	70	1.00 – 6.40	2.41	1.50	0.88	-0.13
PTCI: Self	70	1.00 – 6.19	2.44	1.40	0.85	-0.29
PTCI: World	71	1.00 – 6.71	3.25	1.84	0.28	-1.26

Hypothesis 6: Unsupportive responses to disclosure would be positively related to posttraumatic cognitions. Linear regression was employed to examine this hypothesis. The USII-TC score was the primary predictor of interest and the criterion variable was total PTCI score. In the first step, participant characteristics including prior trauma exposure, having at least a 4-year degree, being employed, and participant age were included in the model. The second step included the addition of USII-TC score. Results of the regression analysis are displayed in Table 25.

In the first step, the model was significant, participant characteristics explained 47% of the variance in posttraumatic cognitions, and trauma history and age were significant predictors, with younger age relating to more posttraumatic cognitions. In step two, the model was significant, and unsupportive responses to disclosure were identified as a significant predictor of posttraumatic cognitions. Trauma history remained a significant predictor, while age was no

longer significantly related to posttraumatic cognitions. Overall, the full model explained 56% of the variance in posttraumatic cognitions. These results support hypothesis 6.

Table 25

Unsupportive Social Responses to Disclosure and PTCI: Linear Regression

	Standardized β	*t*	*p*
Step One:			
Prior trauma	.55	1.01	<.001
4-year degree	.16	1.01	.320
Employed	-.16	1.08	.290
Participant age	-.37	2.61	.014
Full Model: $F(4,32) = 7.22$, $p < .001$ with $R^2 = .47$			
Step Two:			
Prior trauma	.33	2.12	.022
4-year degree	.20	1.44	.159
Employed	-.22	1.65	.109
Participant age	-.23	1.76	.089
Unsupportive responses	.46	3.41	.002
Full Model: $F(5,31) = 10.01$, $p = <.001$ with $R^2 = .56$, $\Delta R^2 = .14$, $\Delta F = 11.61$, $p = .002$			

Note: $n = 37$. Regressions performed using simultaneous entry. R^2 reported above are adjusted R^2.

Hypothesis 9: Posttraumatic cognitions will be positively related to postpartum depression symptoms. Linear regression was again employed to examine this hypothesis. The predictor of interest was PTCI score and the criterion variable was total EPDS score. In the first step, participant characteristics including prior trauma exposure, having at least a 4-year degree, having a historical psychiatric diagnosis, and having at least one pregnancy complication were included as predictors in the model. The second step included the addition of PTCI score as a predictor. Results of the regression analysis are displayed in Table 26.

In the first step, the model was significant, participant characteristics explained 34% of the variance in depressive symptoms, and trauma history was a significant contributor. In the final step, the model was significant, and posttraumatic cognitions was as a significant predictor

of depressive symptoms. Prior trauma was no longer a significant predictor, but having at least one pregnancy complication was a significant predictor of posttraumatic cognitions. The relationship between psychiatric history and depressive symptoms approached significance. Overall, the full model explained 73% of the variance in depressive symptoms. These results support hypothesis 9.

Table 26

Posttraumatic Cognitions and Depression Symptoms: Linear Regression

	Standardized β	*t*	*p*
Step One:			
Prior trauma	.39	2.86	.007
4-year degree	-.06	0.47	.644
Psychiatric history	.26	1.97	.056
Pregnancy complication(s)	.18	1.43	.159
Full Model: $F(4,41) = 6.78$, $p < .001$ with $R^2 = .34$			
Step Three:			
Prior trauma	.10	1.00	.325
4-year degree	-.04	0.48	.636
Psychiatric history	.18	1.98	.055
Pregnancy complication(s)	.18	2.17	.036
Posttraumatic cognitions	.67	1.02	<.001
Full Model: $F(5,40) = 21.68$, $p = <.001$ with $R^2 = .73$, $\Delta R^2 = .33$, $\Delta F = 49.32$, $p < .001$			

Note. $n = 46$. Regressions performed using simultaneous entry. R^2 reported above are adjusted R^2;

Hypothesis 10: Posttraumatic cognitions will be positively related to childbirth-specific PTSD symptoms. Linear regression was again employed to examine this hypothesis. The predictor of interest was PTCI score, and the criterion variable was PCL-5 score. In the first step, participant characteristics including prior trauma exposure, having at least a 4-year degree, being primigravida, and participant age were included as predictors in the model. The second step included the addition of PTCI score as a predictor. Results of the regression analysis are displayed in Table 27.

In the first step, the model was significant, and participant characteristics explained 34% of the variance in PTSD symptoms. Participant age was the only significant predictor of PTSD symptoms, with younger participants reporting more severe PTSD symptoms. In the final step, the model was significant, and posttraumatic cognitions was identified as the only significant predictor of PTSD symptoms. Overall, the full model explained 62% of the variance in PTSD symptoms. These results support hypothesis 10.

Table 27

Posttraumatic Cognitions and PTSD Symptoms: Linear Regression

	Standardized β	*t*	*p*
Step One:			
Prior trauma	.25	1.69	.099
4-year degree	.08	0.54	.592
Participant age	-.51	3.72	.001
Primigravida	-.26	1.73	.091
Full Model: $F(4,37) = 6.17$, $p = .001$ with $R^2 = .34$			
Step Two:			
Prior trauma	.07	0.60	.554
4-year degree	-.04	0.35	.729
Participant age	-.14	1.17	.249
Primigravida	-.05	0.38	.705
Posttraumatic cognitions	.69	5.36	<.001
Full Model: $F(5,36) = 14.39$, $p < .001$ with $R^2 = .62$, $\Delta R^2 = .27$, $\Delta F = 28.74$, $p < .001$			

Note. $n = 42$. Regressions performed using simultaneous entry. R^2 reported above are adjusted R^2;

Hypotheses 11-14: Maladaptive coping and posttraumatic cognitions will mediate the relationships between unsupportive responses to disclosure and symptoms of postpartum depression and childbirth-specific PTSD. Regression analyses supported hypotheses that unsupportive responses to disclosure (predictor) was significantly associated with maladaptive coping (mediator 1; hypothesis 5), posttraumatic cognitions (mediator 2; hypothesis 6), depressive symptoms (criterion variable; hypothesis 3), and PTSD symptoms (criterion variable;

hypothesis 4). Analyses of hypotheses 7 and 8 demonstrated the maladaptive coping was significantly associated with both depressive and PTSD symptom severity, and analyses of hypotheses 9 and 10 demonstrated that posttraumatic cognitions were significantly associated with both depressive and PTSD symptom severity. Therefore, it was appropriate to evaluate maladaptive coping and posttraumatic cognitions as mediators of the relationship between unsupportive social responses to disclosure and postpartum psychological distress. Results should be interpreted with caution due to the small sample size (*ns* < 42).

Mediation by maladaptive coping. Mediation of the relationship between unsupportive responses to traumatic childbirth disclosure and depressive symptoms by maladaptive coping (hypothesis 11) was evaluated first. Forty-one participants who disclosed and completed all of the relevant survey items were included in this analysis. USII-TC score was the predictor, EPDS score was the outcome, and CSI Disengagement score was the mediator. Covariates included prior trauma, having at least a 4-year degree, a historical psychiatric diagnosis, and pregnancy complication(s). Results are summarized in Table 28 and the model is displayed in Figure 2.

The total effect of unsupportive responses to disclosure on depressive symptoms was significant (*c, p* = .010). Unsupportive responses to disclosure did not significantly relate to depressive symptoms when the indirect effect of maladaptive coping was taken into account (*c'*). The partial effects of unsupportive responses on maladaptive coping (*a*) and maladaptive coping on depression (*b*) were both statistically significant. A 95% bias-corrected confidence interval based on 5,000 bootstrap samples indicated that the indirect effect of unsupportive responses on depression through maladaptive coping (*ab* = 4.59) did not include zero (1.84, 7.80), suggesting that the indirect effect was statistically significant. As the total effect of unsupportive responses was significant, the direct effect (*c'*) was no longer significant once the mediator was accounted

for, and the indirect effect was significant, these results provide evidence for mediation and support hypothesis 11.

Table 28.

Unstandardized Regression Coefficients, Standard Errors, and Model Summary Data for Mediation Model with Maladaptive Coping as the Mediator and Depressive Symptoms as the Outcome

		Maladaptive coping				Depressive symptoms		
		Coeff	*SE*	*p*		Coeff	*SE*	*p*
Unsupportive responses	*a*	15.92	3.56	<.001	*c'*	-0.25	1.54	.872
Maladaptive coping					*b*	0.29	0.06	<.001
Constant		23.86	5.03	<.001		-4.62	2.23	.046
Prior trauma		1.44	0.99	.154		0.39	0.35	.271
4-year college degree		-0.23	3.89	.953		-0.30	1.35	.823
Psychiatric history		3.14	4.28	.468		1.48	1.49	.329
Pregnancy complication(s)		-3.98	3.92	.317		2.99	1.37	.036
		$R^2 = .62$				$R^2 = .74$		
		$F(5,35) = 11.17$, $p < .001$				$F(6,34) = 15.82$, $p < .001$		

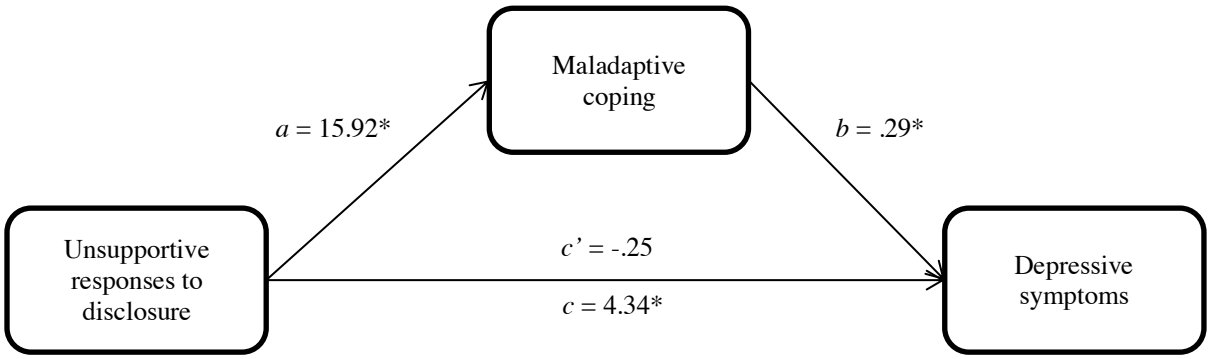

Figure 2. Mediation of the relationship between unsupportive responses to disclosure and postpartum depression symptoms by maladaptive coping

Mediation of the relationship between unsupportive responses to traumatic childbirth disclosure and PTSD symptoms by maladaptive coping (hypothesis 12) was evaluated next. Thirty-seven participants who disclosed and completed all of the relevant survey items were

included in this analysis. USII-TC score was the predictor, PCL-5 score was the outcome, and CSI Disengagement score was the mediator. Covariates included prior trauma, participant age, having at least a 4-year degree, and being primigravida. Results are summarized in Table 29 and the model is displayed in Figure 3.

Table 29.

Unstandardized Regression Coefficients, Standard Errors, and Model Summary Data for Mediation Model with Maladaptive Coping as the Mediator and PTSD Symptoms as the Outcome

		Maladaptive coping				PTSD symptoms		
		Coeff	*SE*	*p*		Coeff	*SE*	*p*
Unsupportive responses	*a*	14.25	3.72	.001	*c'*	4.73	4.32	.283
Maladaptive coping					*b*	0.91	0.17	<.001
Constant		47.63	11.16	<.001		-16.50	13.48	.229
Prior trauma		0.67	0.94	.480		1.28	0.91	.169
4-year college degree		2.78	3.64	.451		-0.83	3.51	.815
Age		-0.65	0.31	.042		-0.28	0.31	.387
Primigravida		-9.84	4.22	.026		-0.85	4.38	.032
		$R^2 = .68$				$R^2 = .79$		
		$F(5,31) = 13.09, p < .001$				$F(6,30) = 18.67, p < .001$		

The total effect of unsupportive responses to disclosure on depressive symptoms was significant (*c, p* = .001). Unsupportive responses did not significantly relate to PTSD symptoms when the indirect effect of maladaptive coping was taken into account (*c*'). The partial effects of unsupportive responses on maladaptive coping (*a*) and maladaptive coping on PTSD symptoms (*b*) were both statistically significant. A 95% bias-corrected confidence interval based on 5,000 bootstrap samples indicated that the indirect effect of unsupportive social responses on depression through maladaptive coping (*ab* = 12.98) did not include zero (4.82, 22.72), suggesting that the indirect effect was statistically significant. As the total effect of unsupportive

responses was significant, the direct effect (*c'*) was no longer significant once the mediator was accounted for, and the indirect effect was significant, these results provide evidence for mediation and support hypothesis 12.

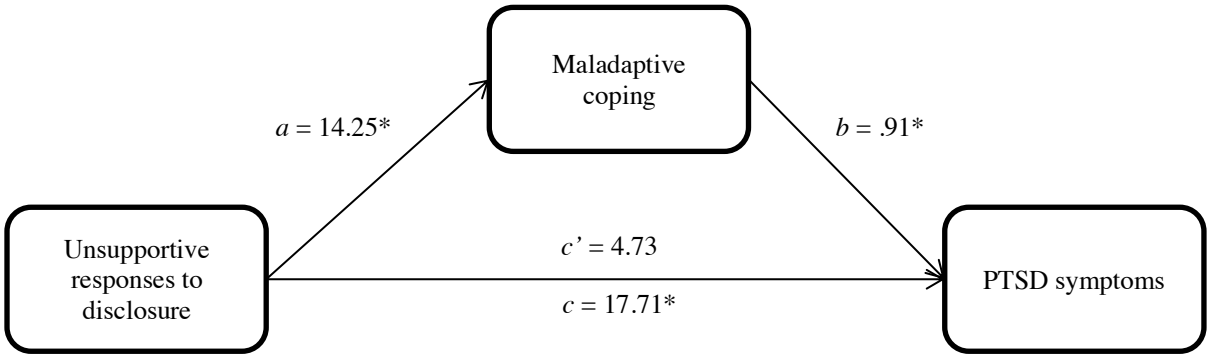

Figure 3. Mediation of the relationship between unsupportive responses to disclosure and PTSD symptoms by maladaptive coping

Mediation by posttraumatic cognitions. Mediation of the relationship between unsupportive responses to traumatic childbirth disclosure and depressive symptoms by posttraumatic cognitions (hypothesis 13) was evaluated next. Thirty-eight participants who disclosed and completed all of the relevant survey items were included in this analysis. USII-TC score was the predictor, EPDS score was the outcome, and PTCI score was the mediator. Covariates included prior trauma, having at least a 4-year degree, history of psychiatric illness, and pregnancy complication(s). Results are summarized in Table 30 and the model is displayed in Figure 4.

The total effect of unsupportive responses to disclosure on symptoms of depression was significant (*c*, $p = .009$). Unsupportive responses did not significantly relate to depressive symptoms when the indirect effect of posttraumatic cognitions was taken into account (*c'*). The partial effects of unsupportive responses on posttraumatic cognitions (*a*) and posttraumatic

Table 30.

Unstandardized Regression Coefficients, Standard Errors, and Model Summary Data for Mediation Model with Posttraumatic Cognitions as the Mediator and Depression Symptoms as the Outcome

		Posttraumatic cognitions				Depressive symptoms		
		Coeff	*SE*	*p*		Coeff	*SE*	*p*
Unsupportive responses	*a*	38.25	11.26	.002	*c'*	0.89	1.46	.546
Posttraumatic cognitions		-	-	-	*b*	0.10	0.02	<.001
Constant		28.38	15.97	.085		-0.85	1.86	.650
Prior trauma		7.68	3.15	.021		0.05	0.38	.888
4-year college degree		1.13	12.45	.928		-1.09	1.38	.437
Psychiatric history		2.32	13.29	.862		2.36	1.48	.120
Pregnancy complication(s)		-10.50	12.67	.413		2.74	1.42	.063
			$R^2 = .58$				$R^2 = .76$	
			$F(5,32) = 8.67$, $p < .001$				$F(6,31) = 16.49$, $p < .001$	

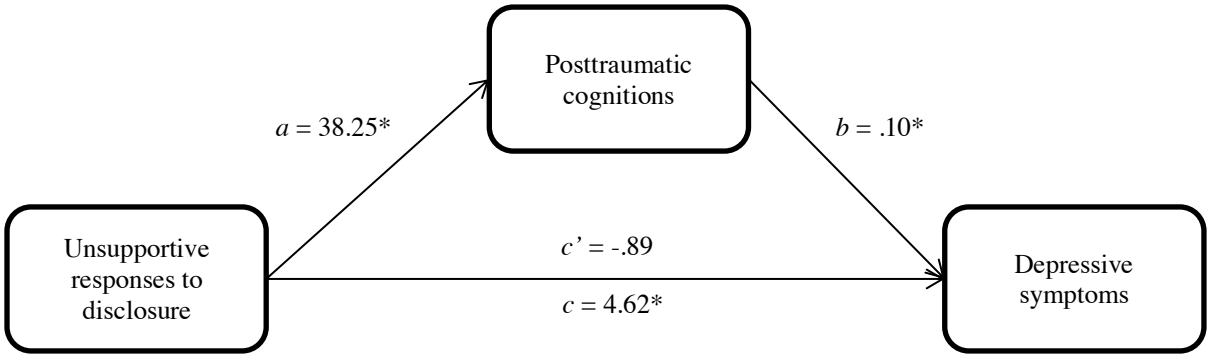

Figure 4. Mediation of the relationship between unsupportive responses to disclosure and postpartum depression symptoms by posttraumatic cognitions

cognitions on depression (*b*) were both statistically significant. A 95% bias-corrected confidence interval based on 5,000 bootstrap samples indicated that the indirect effect of unsupportive responses on depression through maladaptive coping (*ab* = 3.73) did not include zero (1.28, 6.29), suggesting that the indirect effect was statistically significant. As the total effect of unsupportive responses was significant, the direct effect (*c'*) was no longer significant once the

mediator was accounted for, and the indirect effect through posttraumatic cognitions was significant, these results provide evidence for mediation and support hypothesis 13.

Mediation of the relationship between unsupportive responses to traumatic childbirth disclosure and PTSD symptoms by posttraumatic cognitions (hypothesis 14) was evaluated next. Thirty-four participants who disclosed and completed all of the relevant survey items were included in this analysis. USII-TC score was the predictor, PCL-5 score was the outcome, and PTCI score was the mediator. Covariates included prior trauma, participant age, having at least a 4-year degree, and being primigravida. Results are summarized in Table 31 and the model is displayed in Figure 5.

Table 31.

Unstandardized Regression Coefficients, Standard Errors, and Model Summary Data for Mediation Model with Posttraumatic Cognitions as the Mediator and PTSD Symptoms as the Outcome

		Posttraumatic cognitions				PTSD symptoms		
		Coeff	*SE*	*p*		Coeff	*SE*	*p*
Unsupportive responses	*a*	36.49	12.57	.007	*c'*	8.33	5.19	.611
Posttraumatic cognitions					*b*	0.24	0.07	.002
Constant		88.50	37.44	.025		7.64	14.85	.611
Prior trauma		8.26	3.16	.014		0.24	1.28	.855
4-year college degree		11.63	12.26	.351		-0.50	4.51	.912
Age		-2.30	1.02	.032		-0.39	0.40	.346
Primigravida		-0.03	14.52	.999		1.71	5.28	.748
		$R^2 = .62$				$R^2 = .70$		
		$F(5,28) = 9.03, p < .001$				$F(6,27) = 10.61, p < .001$		

The total effect of unsupportive responses to disclosure on PTSD symptoms was significant (*c, p* = .004). Unsupportive responses did not significantly relate to PTSD symptoms when the indirect effect of posttraumatic cognitions was taken into account (*c'*). The partial

effects of unsupportive social interactions on posttraumatic cognitions (*a*) and posttraumatic cognitions on PTSD symptoms (*b*) were both statistically significant. A 95% bias-corrected confidence interval based on 5,000 bootstrap samples indicated that the indirect effect of unsupportive responses on PTSD symptoms through posttraumatic cognitions (*ab* = 8.64) did not include zero (1.58, 18.46), suggesting that the indirect effect was statistically significant. As the total effect of unsupportive responses was significant, the direct effect (*c'*) was no longer significant once the mediator was accounted for, and the indirect effect was significant, these results provide evidence for mediation and support hypothesis 14.

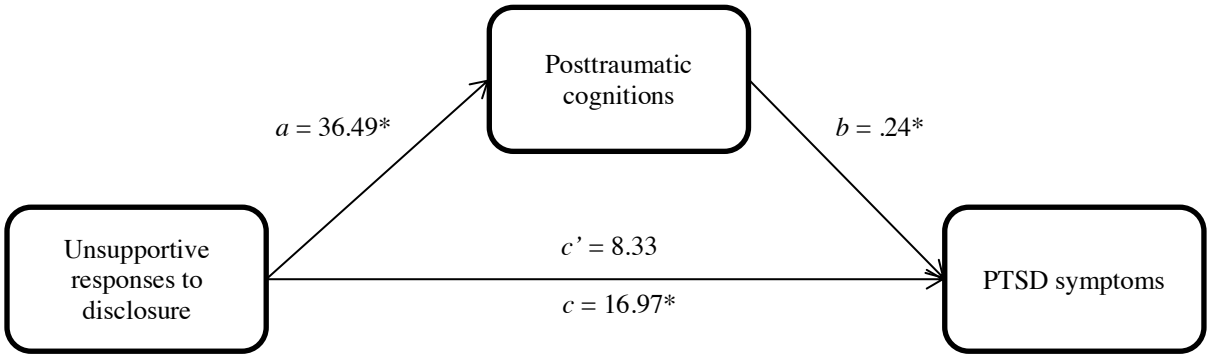

Figure 5. Mediation of the relationship between unsupportive responses to disclosure and PTSD symptoms by posttraumatic cognitions

CHAPTER IV: DISCUSSION

This study was an exploratory investigation into disclosure of traumatic childbirth experiences, social responses to that disclosure, and potential mechanisms by which negative social responses to disclosure influence postpartum psychological distress. Prior to this research, little information existed regarding traumatic childbirth disclosure. This research is the first to identify the proportion of women who disclosed their traumatic childbirth experience utilizing an operational definition for traumatic childbirth consistent with DSM-5 diagnostic criteria. This is also the first research to explore reasons for and for not disclosing, the types of responses women received from social partners following disclosure, and relationships among disclosure, social responses to disclosure, and postpartum psychological distress in the context of traumatic childbirth. Disclosure was not associated with postpartum depressive or PTSD symptomology, but negative social responses to disclosure were related to both types of postpartum distress. In addition, negative social responses to disclosure were associated with both posttraumatic cognitions and maladaptive coping, which were associated with both depressive and PTSD symptomology. Analyses support mediation of the relationship between unsupportive social responses to disclosure and distress by maladaptive coping and posttraumatic cognitions.

Traumatic Childbirth Characteristics

Participant descriptions of their childbirth experience revealed numerous themes reflecting the difficult nature of childbirth and the appraisal of childbirth as traumatic. The theme most often identified was medical characteristics, and medical problems were most often cited as a reason participants appraised childbirth as traumatic. These medical characteristics indicated the presence of an objective threat to the mother and/or baby's well-being during childbirth, which is consistent with DSM-5 diagnostic Criterion A for a potentially traumatic event. These

results are also consistent with prior research demonstrating that perinatal health complications contribute to traumatic childbirth appraisal (e.g., Stramrood et al., 2011).

A heightened perception of risk was the second most-often reported theme in the childbirth description and responses to both open-ended trauma appraisal items, suggesting that the mother's subjective experience of a threat was an important contributor to trauma appraisal. The high frequency of a perceived threat noted in trauma appraisal is consistent with prior research identifying subjective birth experiences as a mediator of the relationship between objective medical risks of childbirth and postpartum trauma symptoms (Garthus-Niegel, et al., 2013). Consistency between perceived threat and objective medical characteristics was not examined in the current study, but prior research has also noted that a mother's perception of threat may not be consistent with her medical provider's (Beck, 2004; Brandon et al., 2011). Thus, it is important to consider not only the medical occurrences in childbirth, but also a woman's interpretation of her childbirth-related experiences when considering postpartum PTSD. This interpretation of events may also partially explain variability among trauma appraisal and postpartum psychological distress among women who experience similar medical occurrences during childbirth.

Over one-third of participants noted postpartum concerns in their childbirth description. The high proportion of women who noted postpartum concerns in consistent with past research. Postpartum stressors (e.g., high perceived stress; Ayers, et al., 2016) and negative repercussions of traumatic childbirth (e.g., poor mother-infant interaction; Beck, 2011) have been identified as maintenance factors of PTSD. These concerns emphasize that although the traumatic experience may be childbirth, postpartum experiences occurring after the initial threat has passed are important for maternal well-being.

Traumatic Childbirth Disclosure

Over three-quarters of the sample reported that they had disclosed their traumatic childbirth experience to at least one other person. This proportion of disclosers is similar to the proportion of women who disclose sexual assault experiences occurring in adulthood (77% to 87%; Littleton, 2010; Ullman & Filipas, 2001).

Disclosure characteristics. Nearly all women reported that they disclosed in person. Most women reported disclosing to individuals with whom they likely had a close, personal relationship (i.e., partner, family member, and friend). Interestingly, less than half of disclosing participants reported that they disclosed to their medical provider, and the proportion who did disclose to a medical provider was almost identical to the proportion of women who utilized online support methods to disclose. The low proportion of disclosers who utilized a medical provider for support may be reflective of low trust in the medical team. Notably, lack of support from medical providers was reported by over one-fourth of the sample in their childbirth description. If a woman felt unsupported during birth, she would likely be apprehensive to reach out to her provider for postpartum support. Furthermore, the obstetrician who was present during childbirth may serve as a trauma reminder, triggering distressing physiological, emotional, and cognitive symptoms in the patient. Maladaptive copers would likely avoid interacting with this provider in an effort to minimize these symptoms. As over one-third of women use their obstetric/gynecologic provider as their primary care provider, they may have limited access to other medical providers to utilize for support (Scholle & Kelleher, 2003).

Almost two-thirds of the sample reported that they disclosed in an online message post. This proportion may be inflated due to the social media recruitment method, as women who saw the online flyer were utilizing a social media group that encouraged discussion of personal

childbirth-related experiences. Similarly, Internet-based disclosure targets (i.e., online support group, social media group) were reported by a sizeable proportion of the sample. The high utilization of online support may be inflated due to the recruitment method, but it may also reflect increased access to postpartum support through social media and online communities. In an investigation of online postpartum depression support groups, Evans, Donelle, and Hume-Loveland (2012) identified web-based groups as a means of obtaining emotional peer support and information in an environment that diminishes stigma and provides reassurance and validation. In the current study, commonly reported reasons for disclosure are consistent with this prior research, as obtaining emotional support was identified as a reason for disclosing by one-in-four mothers, connecting with others mothers was identified by 15%, and obtaining information was reported by 11%. Almost 30% of responders identified a lack of support as a barrier to disclosure. Future investigation into web-based interventions for postpartum depression and PTSD is warranted to further overcome barriers to obtaining support.

Relationship with psychological distress. The relationship between disclosure and PTSD symptomology has demonstrated mixed results in past research. While some studies support a beneficial effect of disclosure on well-being (e.g., Chaudoir & Fisher, 2010), others find no support for decreased PTSD symptomology following disclosure (e.g., Bedard-Gilligan, et al., 2010). In the current study, disclosure was not significantly related to postpartum depressive or PTSD symptomology. Thus, hypotheses 1 and 2 were not supported. However, these analyses were significantly under-powered due to the low sample size and the high proportion of disclosers. Furthermore, participants reported a high rate of psychological distress at baseline, with over half of participants reporting a postpartum mental health diagnosis. As such, these results should be interpreted with caution.

The directionality of any potential relationship with psychological distress cannot be determined using this cross-sectional data. Disclosure may be a protective factor against the development of PTSD, and past research has demonstrated that those with a PTSD diagnoses are less likely to disclose (Bedard-Gilligan et al., 2012). Although there is likely a relationship between the reluctance to disclose and symptom severity (Mueller et al., 2008), it is unclear if higher PTSD contributes to a reluctance to disclose, or if the decision not to disclose contributes to higher PTSD. Further research utilizing a longitudinal approach would be necessary to determine any directionality.

Social Responses to Traumatic Childbirth Disclosure

Positive social responses to disclosure. Positive social responses to disclosure were measured using the Emotional Support and Tangible Aid/Information subscales of the SRQ. In general, participants reported higher Emotional Support if they were employed, this was their first pregnancy, and their baby was born at lower birth weight. Tangible Aid/Information scores were higher for women who were unmarried and had lower education. It may also be that women with fewer personal resources (e.g., marital partner, college education, personal income) are provided more tangible support by their support network, while women with higher personal resources are provided with more emotional support. Women who are employed likely have access to an additional support network through their occupational community, as well. These individuals would be able to provide emotional support, but may not be present for more daily, tangible needs. With respect to gravidity, it may be that a woman's social network responds differently following the excitement of a first pregnancy compared with subsequent pregnancies, but no research has demonstrated a relationship between gravidity and degree or quality of postpartum social support. Taken together, these results suggest that they type and degree of

positive responses that women receive to traumatic childbirth disclosure vary by demographic and pregnancy-related individual characteristics.

Neither type of positive social responses to disclosure was significantly associated with symptoms of depression or PTSD. Interestingly, participants most often noted the positive impact of emotional support and specific and tangible support when asked to describe additional positive social responses to their childbirth that were not previously captured by the SRQ items. Postpartum emotional support was also most-often reported when participants were asked what other kinds of childbirth-specific support they wanted, but they had not received. Emotional support was also significantly, negatively correlated with maladaptive coping, although this relationship disappeared when controlling for prior trauma and participant characteristics in the regression analysis. These results may suggest that women are seeking emotional and tangible support postpartum to influence available coping mechanisms, but this support is not strongly influencing psychological distress directly. Support for this hypothesis can be found in social-cognitive theory, which suggests that it is the perception of the availability of social support that influences health rather than the actual utilization of social support (Lakey & Cohen, 2000). The availability of support then acts as a buffer to the negative impacts of stress by increasing the availability of adaptive coping mechanisms and alternative interpretations of stressful events (Cohen, 2004). In the current study, only perceived receipt of positive social reactions to disclosure was measured. It may be beneficial to concurrently measure perceived availability of support in future research to better understand the relationships between these variables. It would also be interesting to examine relationships between positive social responses to disclosure and utilization of adaptive coping strategies to assess for a potentially buffering effect against distress.

Negative social responses to disclosure. Nearly all participants reported that they disclosed as a means of coping with their traumatic childbirth experience. The most frequently reported reason for not disclosing was anticipation of negative reactions from the social partner. Taken together, postpartum women utilize disclosure as a means of seeking support, but the anticipation of negative reactions to that either that support-seeking behavior or the content of their disclosure sometimes prevent women from disclosing.

Negative/unsupportive social responses to traumatic childbirth disclosure were assessed with the USII and additional items from four SRQ negative social response to disclosure subscales. In principal components analysis, the items generally fit seven factors that reflected similar themes as the original measures. The exception to this was the Bumbling subscale of the USII, the items of which were absorbed into other factors. No items were removed for failing to load onto any of these factors (i.e., all items had at least one factor loading of .40 or greater). When asked about other types of negative support not captured by the USII or SRQ negative subscale items, women again reported similar themes (i.e., minimizing, blaming, dismissing, lack of support). Thus, unsupportive social responses to traumatic childbirth disclosure fit similar themes as the types of negative responses individuals received following disclosure of other types of trauma.

Overall, women reported fewer unsupportive social responses if they were well-educated, employed, and this was their first pregnancy and childbirth. These results mirror the demographic, pregnancy, and childbirth characteristics that demonstrated significant positive relationships with positive social reactions to disclosure. If women with more personal resources typically receive more positive responses, it may be that positive and negative social responses to disclosure offset each other such that more social responses deemed positive contributes to the

perception of fewer negative responses. Further research specifically on perceived quality of social support would be necessary to investigate within-subject relationships between these variables.

Unsupportive social responses to traumatic childbirth disclosure were significantly, positively related to the severity of both postpartum depressive and childbirth-specific PTSD symptoms. These relationships held true while controlling for prior trauma and relevant participant demographic, pregnancy, and childbirth characteristics. Thus, hypotheses three and four were supported. These results are consistent with prior research demonstrating a significant positive relationship between unsupportive social interactions to disclosure of medical stressors such as infertility (Mindes et al., 2003) and cancer diagnosis (Manne & Glassman, 2000) with depression severity.

Mediating effects of maladaptive coping and posttraumatic cognitions

Maladaptive coping and posttraumatic cognitions separately mediated the relationships between unsupportive social responses to disclosure and psychological distress in the expected direction. Overall, unsupportive responses to disclosure was related to greater maladaptive coping and posttraumatic cognitions, which, in turn, were related to greater depressive and PTSD symptomology. As this was a cross-sectional analysis, it is important to note that temporal relationships among these variables were not established.

Maladaptive coping. These results provide support for Lazarus and Folkman's (1984) theory of cognitive appraisal, which suggests that an individual evaluates the importance of a stressor and their personal resources for coping with that stressor. Women are likely utilizing disclosure of their traumatic childbirth in an effort to seek support as a means of coping with this stressful experience. When the responses they receive from their social partner are unsupportive,

it could influence their secondary appraisal of their personal coping resources as low. In other words, they are seeking support as a means to cope, but their support person is denying them this resource by responding in a manner perceived as unsupportive. The individual then engages in more maladaptive coping, which contributes to distress.

Posttraumatic cognitions. These results provide support for Ehler's and Clark's (2000) cognitive model of PTSD, which proposed that trauma appraisals in the form of posttraumatic cognitions act as a maintenance factor of distress. These appraisals identify the trauma as currently, seriously threatening. Unsupportive responses to disclosure of traumatic childbirth were related to increased posttraumatic cognitions, suggesting that perceived negative responses from social partners regarding the traumatic childbirth experience may increase the appraisal of the childbirth as currently, seriously threatening.

Support for this hypothesis may come from Janoff-Bulman's (2010) shattered assumptions theory. According to this theory, a traumatic experience potentially violates three basic assumptions individuals hold: 1) the world is benevolent (i.e., good things generally happen, and people are generally good), 2) the world is meaningful (i.e., good things happen to good people), and 3) the self is worthy (i.e., self-evaluation as a good person). When these assumptions are violated by a trauma, the individual experiences distress. Distress can be mitigated by rebuilding these assumptions, either by creating new ones or modifying the old ones. It may be that if disclosure is utilized as a means of seeking support, negative responses from social partners prevent rebuilding by maintaining that people are *not* good (i.e., the social partner provides a negative response) and the self is *not* worthy (e.g., the response from the social partner puts blame on the individual). In the current study, women often noted social responses to disclosure that minimized the importance of their childbirth experience, placed

blame on them for the events that occurred, and distanced them from their social support, among others. Further research is necessary to investigate potential relationships between these types of negative social responses and shattered assumptions, perhaps operating through posttraumatic cognitions that prevent rebuilding of assumptions.

Limitations

The findings of this study should be interpreted with acknowledgement of several methodological limitations. First, the starting sample was greatly diminished due to participant attrition at various points across the survey. The high attrition was likely due to high participant burden due to the long length of the survey and the nature of the questions. Participants were asked to write about their childbirth and their experiences associated with trauma appraisal early on. Expressive writing about trauma can be concurrently beneficial for well-being and emotionally taxing (Blasio, et al., 2015; Guastella & Dadds, 2008), and it may have contributed to participant fatigue.

This study was cross-sectional in nature and required retrospective self-report of childbirth and postpartum experiences. Although the time frame was limited to one year postpartum in an effort to minimize bias due to delayed recall, there was still room for error. This methodology may have also complicated report of social responses to disclosure. The number of times women disclosed and timing of disclosure were not assessed here, but women who disclosed to multiple partners across multiple time points were asked to aggregate their perception of their social partners' reactions.

The demographic homogeneity of the sample limits the ability to generalize these results. Other online samples in this research area demonstrate similar demographics (e.g., Ayers et al., 2009). It will be important to assess these experiences in a more diverse sample for multiple

reasons. First, there are higher rates of trauma (APA, 2013) and postpartum distress (Abrams, Dornig, & Curran, 2009) among low income and minority women. Second, health disparities exist regarding pregnancy and childbirth-related medical complications. For example, African American women are at significantly greater risk to experience pre-eclampsia during pregnancy compared with Caucasian women (Breathett, Muhlestein, Foraker, & Gulati, 2014). Third, disclosure characteristics may differ due to availability of emotional and tangible support and cultural expectations. Although participation in this study was limited to women living in the United States who were able to read/write in English, important cultural variables were not assessed, including acculturation, country of origin, religion, and first language.

Finally, participants reported high rates of psychiatric problems diagnosed prior to pregnancy (48%) and postpartum (51%). Additionally, nearly 40% of participants reported that they were engaged in some form of psychological support postpartum. These characteristics suggest that women who were distressed, psychologically minded, and apt to seek care for psychological distress self-selected into this study.

Clinical Implications and Future Directions

This study was intended to be an exploratory investigation of potential mechanisms that increase the likelihood to experience depressive and PTSD symptomology following a traumatic childbirth. Separately, unsupportive social interactions, maladaptive coping, and posttraumatic cognitions following traumatic childbirth disclosure were all positively related to psychological distress. Unsupportive social interactions increased maladaptive coping and posttraumatic cognitions, which acted as mediators of the relationship between unsupportive social interactions and distress. These are only several factors likely influencing postpartum emotional well-being, and other factors should be examined. These may include, but are not limited to, the number of

social partners the individual discloses to, the content of the disclosure, additional forms of distress (e.g., shame, guilt), and potential protective factors, such as positive mother-infant interaction.

These results indicate that women want to talk about their traumatic childbirth experiences, and they are doing so as a means of seeking support. While most women utilized a personal support network for disclosing (e.g., partner, family member), over one-third disclosed to a medical provider and one-fourth disclosed to a mental health provider for support. When women did not disclose, they indicated that they did not have people to whom they felt comfortable disclosing. These results provide support for recent efforts to integrate mental health care into obstetric and gynecologic practices in an effort to provide women with a source of psychological support (e.g., Poleshuck & Woods, 2014). As women most often noted medical complications and experiences that increased their perception of risk (e.g., pain) as contributors to their trauma appraisal, women who have these experiences may benefit from a psychological consultation at their postpartum provider's visit to provide the opportunity to disclose their experience. Furthermore, as women often noted lack of support from their medical providers, having a psychological provider in the specialty practice provides women with a professional support person who is not involved with their medical care. Finally, a mental health provider would be trained in methods of communication and responses to disclosure, which would decrease the likelihood of the women receiving an unsupportive response in that particular disclosure encounter.

As previously discussed, the obstetrician may serve as a trigger for distress. Women may also have low trust in their provider if they perceived low medical support during childbirth. Both of these factors may contribute to poor attendance to postpartum medical appointments by

women who appraised childbirth as traumatic, but research is needed to investigate associations between appointment attendance and traumatic childbirth. An alternative pathway to providing emotional support to postpartum women is through their child's pediatrician. The American Academy of Pediatrics recommends a prenatal visit and seven pediatric medical appointments within the first year of a child's life (American Academy of Pediatrics, 2017). These appointments may be opportune times to assess for symptoms of postpartum psychological distress, particularly in mothers who experienced a difficult childbirth. Although maternal depression screening is becoming more routine in pediatrician offices, less than 50% of 321 pediatricians surveyed in 2013 reported regularly screening for maternal depression during pediatric visits (Kerker et al., 2017).

Disclosure is risky. While the potential reward is the gain or expansion of a stressor-specific support network, the potential cost is increased negative cognitions, avoidance behaviors, and ultimately emotional distress. Societal expectations placed on women to achieve a normal, positive childbirth may skew this cost/benefit analysis, such that anticipation of a negative response to disclosure makes emotional distress seem more likely. It is important to note that these unsupportive responses are not necessarily born of malintent but may be reflective of discomfort with emotional distress or personal perceptions of social appropriateness. By increasing the amount of communication around traumatic childbirth experiences, we may be able to validate maternal responses to these experiences, and thus shift postpartum expectations, decreasing feelings of failure, blame, and ultimately, depression and PTSD.

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APPENDIX A: IRB APPROVAL LETTER

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** · **www.ecu.edu/irb**

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Meghan Sharp
CC: Christyn Dolbier
Meghan Sharp
Date: 3/7/2017
Re: UMCIRB 16-001920
Social Responses to Disclosure of Adverse Childbirth

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 3/7/2017 to 3/6/2018. The research study is eligible for review under expedited category #7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
Dissertation proposal	Study Protocol or Grant Application
Informed consent	Consent Forms
Online flyer	Recruitment Documents/Scripts
Online post script	Recruitment Documents/Scripts
Posted flyer	Recruitment Documents/Scripts
Study survey	Surveys and Questionnaires

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: SURVEY ITEMS

ELIGIBILITY QUESTIONS

What is your age?

▼ 17 or younger ... 50+

Are you currently living in the United States?

- ○ Yes
- ○ No

Within the past year, did you experience a negative, unpleasant, or difficult childbirth?

- ○ Yes
- ○ No

Is your child resulting from that difficult childbirth experience living?

- ○ Yes
- ○ No

What is the age of your child in weeks? Your best estimate is fine.

▼ Less than 4 weeks ... Older than 1 year

DEMOGRAPHICS AND BACKGROUND INFORMATION

What is your ethnicity?

- ○ Hispanic or Latino
- ○ Not Hispanic or Latino

What race do you identify with most?

- ○ White or Caucasian
- ○ Black or African American
- ○ Alaskan Native, American Indian
- ○ Native Hawaiian, Pacific Islander

- ○ Asian
- ○ Other (please describe): _____

What is your marital status?

- ○ Single (never married)
- ○ Married
- ○ Separated
- ○ Divorced
- ○ Widowed

Are you romantically involved with anyone?

- ○ Yes, living with partner
- ○ Yes, not living with partner
- ○ Not romantically involved

What is your highest level of education?

- ○ Middle school (8th grade) or less
- ○ Graduated high school or earned a GED
- ○ Some college, no degree
- ○ Vocational certificate (e.g., certified nurse assistant)
- ○ Associate's degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ Doctorate or professional degree (e.g., JD, MD, PhD)

Please select the statement below that best describes you right now. You may select more than one choice, if more than one applies to you. If you are currently on maternity leave, please indicate if you are employed full- or part-time.

- ☐ Employed full-time (at least 30 hours per week)
- ☐ Employed part-time (less than 30 hours per week)
- ☐ Not currently employed
- ☐ Unable to work due to disability
- ☐ Retired
- ☐ Other (please describe): _____

What type of health insurance do you have?

- ○ Medicaid/Medicare
- ○ Private or employer insurance
- ○ Tricare
- ○ No insurance

PREGNANCY AND BIRTH INFORMATION

How many times have you been pregnant?

▼ 1 ... 6+

How many times have you given birth, either vaginally or by C-section?

▼ 1 ... 6+

Before this difficult childbirth, had you ever experienced a miscarriage, fetal loss, or abortion?

- ○ No
- ○ Yes

Are you currently pregnant?

- ○ No
- ○ Yes

Please answer the following questions with respect to only the difficult childbirth experience you had within the past year.

Did you have a multiple pregnancy (i.e., twins, triplets, etc.)?

- ○ No
- ○ Yes

What is your baby's birth date?
Month
Day
Year

▼ January ... December ~ 31 ~ 2020

At how many completed weeks gestation was your baby born?

▼ 22 or fewer ... 43+

What was your baby's birth weight (in pounds and ounces)?

Pounds	▼ 0 ... 16
Ounces	▼ 0 ... 16

What was the mode of delivery?

- ○ Vaginal delivery, no instruments used
- ○ Instrumental vaginal delivery (e.g., using vacuum or forceps)
- ○ Planned c-section
- ○ Unplanned or emergency c-section

Did you use any pain relief medication during childbirth?

- [ ] No, did not have pain medication
- [ ] Intravenous (IV)
- [ ] Epidural
- [ ] Local anesthetic
- [ ] General anesthesia
- [ ] Other (please describe): _____

Other than doctors and nurses, who was in the delivery room with you when you gave birth? You may select all that apply.

- [ ] Baby's father
- [ ] Other partner
- [ ] A family member
- [ ] Friend
- [ ] Doula
- [ ] Midwife
- [ ] Other (please describe): _____

In the time since your difficult childbirth experience, have you experienced a miscarriage, fetal loss, or death of a child?

- ○ No

○ Yes

Please indicate if you have been diagnosed with any of the following emotional/mental health conditions before or after your difficult childbirth experience. Please choose any conditions and time period(s) that apply.

	Before childbirth	After childbirth
Generalized anxiety disorder	☐	☐
Panic disorder	☐	☐
Other anxiety disorder (e.g., phobia)	☐	☐
Obsessive compulsive disorder (OCD)	☐	☐
Depression	☐	☐
Posttraumatic stress disorder (PTSD)	☐	☐
Bipolar disorder	☐	☐
Schizophrenia	☐	☐
Other (please describe):	☐	☐

Please indicate if you sought psychological help or support from the following sources in the time since your difficult childbirth. You may select more than one option.

- ☐ Did not seek support
- ☐ Individual psychotherapy or counseling
- ☐ Psychiatric medication such as an antidepressant or antianxiety medication
- ☐ Support group or group counseling
- ☐ Other (please describe): _____

TRAUMATIC CHILDBIRTH

Please describe your difficult childbirth experience.

During your difficult childbirth, was your baby's life in danger or was your baby in danger of being seriously injured?

- ○ No
- ○ Yes

Please describe the specific events and experiences you had during your childbirth that made you believe your baby was in danger.

During your difficult childbirth, was your life in danger or were you in danger of being seriously injured?

- ○ No
- ○ Yes

Please describe the specific events and experiences you had during your childbirth that made you believe you were in danger.

Did you experience any of the following complications with your pregnancy? (Choose all that apply)

- ☐ Hypertension (high blood pressure)
- ☐ Pre-eclampsia and/or HELLP syndrome
- ☐ Blood loss during pregnancy
- ☐ Preterm premature rupture of membranes (PPROM, water breaking before 37 weeks gestation)
- ☐ Membranes ruptured for longer than 24 hours
- ☐ Congenital defects (birth defects)
- ☐ Gestational diabetes
- ☐ Oligohydraminos (too little amniotic fluid)

☐ Other (please describe): _____

Did you experience any of the following complications during childbirth? (Choose all that apply)

☐ Postpartum hemorrhage, or excessive bleeding after birth

☐ Manual placenta removal

☐ Suturing for vaginal tearing

☐ Maternal ICU admittance

☐ Placental abruption

☐ Labor lasting longer than 12 hours

☐ Precipitous labor (rapid labor lasting shorter than 3 hours)

☐ Meconium in the fluid

☐ Neonatal Asphyxia- the baby had a lack of oxygen

☐ Neonatal infection- the baby required antibiotics

☐ Admittance to the neonatal intensive care unit (NICU)

☐ Shoulder dystocia

☐ Other (please describe : _____

How many nights did you stay in the hospital after giving birth?

▼ 1 ... 7 or longer

Do you and/or your baby have lasting health problems or injuries directly related to your childbirth experience?

- ○ No
- ○ Yes. Please describe: _____

DISCLOSURE

After a difficult or negative experience, people may communicate with others about that experience to help get support or process their thoughts, feelings, or changes in their life resulting from the experience. They may communicate with others in a variety of ways, such as talking in person or by phone, writing a letter, sending an email, or posting a message online.

Did you communicate with another person about your difficult childbirth experience?

- ○ No
- ○ Yes

In what way(s) did you communicate about your childbirth experience? Please select all that apply.

- ☐ Talking in person
- ☐ Talking by phone
- ☐ Talking by videochat (e.g., Facetime, Skype)
- ☐ Writing a letter
- ☐ Texting
- ☐ Sending an email
- ☐ Posting a message online (e.g., Facebook message or message board)
- ☐ Other (please describe): _____

Who did you communicate with about your childbirth experience? Please select all that apply.

- ☐ Partner, spouse, or significant other
- ☐ Family member
- ☐ A really close friend
- ☐ A new friend you made recently
- ☐ An acquaintance (e.g., coworker, a friend of a friend)
- ☐ Mental health professional (e.g., psychiatrist, therapist, counselor)
- ☐ Medical professional (e.g., doctor, nurse)
- ☐ Religious or spiritual guide
- ☐ In person support group
- ☐ Online support group
- ☐ Mother or parent-related group (e.g., mom's group, parenting class, Mommy & Me group)
- ☐ Social media group
- ☐ Other (please describe): _____

Using the below slider, please indicate how much detail you provided when you communicated about your childbirth experience.

Briefly mentioned it				Described what happened in detail	
0	1	2	3	4	5

Detail provided	

What were your reasons for communicating with someone about your childbirth experience?

Did you want to communicate with someone about your difficult childbirth experience but chose not to?

- ○ No
- ○ Yes

What were your reasons for not communicating with someone about your difficult childbirth experience?

[**DISCLOSURE OF TRAUMA QUESTIONNAIRE]**

SOCIAL RESPONSES TO DISCLOSURE

[Unsupportive Social Interactions Inventory]

[Positive subscales and select negative subscale items of Social Reactions Questionnaire]

Is there anything else that someone has said or done related to your childbirth experience that was annoying, upsetting, made you angry, or rubbed you the wrong way?

Is there anything else that someone has said or done related to your childbirth experience that was helpful or comforting?

Is there anything you wish someone would have done or said to you to help you with your childbirth experience?

[POSTTRAUMTIC COGNITIONS INVENTORY]

[DISENGAGEMENT SUBSCALE OF COPING STRATEGIES INVENTORY]

[PTSD CHECKLIST FOR DSM-5]

[POSTTRAUMATIC GROWTH INVENTORY]

[EDINBURGH POSTNATAL DEPRESSION SCALE]

[STRESSFUL LIFE EVENTS SCREENING QUESTIONNAIRE]

[THANK YOU AND ALARM PROTOCOL]

APPENDIX C: ALARM PROTOCOL MESSAGES

Message to all participants:

The time following childbirth can be rewarding, and it can also be stressful and challenging for many women. The following organizations can provide you with information and support related to stress and emotional well-being.

The Postpartum Stress Center: http://postpartumstress.com/
Postpartum Support International: http://www.postpartum.net/
Hand to Hold (support for NICU families): http://handtohold.org/
National Center for Posttraumatic Stress Disorder: http://www.ptsd.va.gov/
Rape, Abuse, and Incest National Network: https://rainn.org/

If you or someone you know is in crisis and/or considering suicide, please call the **National Suicide Prevention Lifeline** at 1-800-273-TALK or visit http://www.suicidepreventionlifeline.org/.

Message to participants who indicated they were experiencing thoughts of suicide or self-harm on EPDS:

The time following childbirth can be rewarding, and it can also be stressful and challenging for many women.

On this survey, you indicated that you have had thoughts of harming yourself. If you are in crisis and/or considering suicide, please call the **National Suicide Prevention Lifeline** at 1-800-273-TALK or visit http://www.suicidepreventionlifeline.org/. Trained counselors are available 24-hours to speak with you for free, at any time. You will also be able to explore resources to find a counselor or support group near you to get the help you need.

The following organizations can provide you with additional information and support related to stress and emotional well-being.

The Postpartum Stress Center: http://postpartumstress.com/
Postpartum Support International: http://www.postpartum.net/
Hand to Hold (support for NICU families): http://handtohold.org/
National Center for Posttraumatic Stress Disorder: http://www.ptsd.va.gov/
Rape, Abuse, and Incest National Network: https://rainn.org/

APPENDIX D: QUALITATIVE CODEBOOK

SOCIAL RESPONSES TO DISCLOSURE OF ADVERSE CHILDBIRTH
OPEN-ENDED CONTENT ANALYSIS
QUALITATIVE CODEBOOK

PREGNANCY/CHILDBIRTH QUESTIONS

DIFFICULT CHILDBIRTH: "Please describe your difficult childbirth experience."

1) **MEDICAL INTERVENTIONS**:
    a. **PREGNANY COMPLICATIONS**: Participant indicated she experienced a health problem occurring during pregnancy (e.g., intrauterine growth restriction, incompetent cervix) or as a result of pregnancy (e.g., HELLP syndrome, gestational diabetes).
    b. **BED REST**: Participant indicated that she was placed on bed rest or admitted to the antepartum unit during pregnancy.
    c. **INDUCTION:** Participant indicated that labor was induced or augmented with a medicinal agent (e.g., Pitocin, Cervadil).
    d. **CHILDBIRTH COMPLICATIONS**: Participant indicated that she experienced complications during or as a result of labor and delivery (e.g., failure to progress, perineal tearing, fetal heart rate decelerations).
    e. **C-SECTION:** Participant indicated that she had a C-section.
    f. **PREMATURITY:** Participant indicated that her baby was born premature (less than 37 weeks gestation) or low birth weight (less than 2500 grams or 5 lbs 8 oz).
    g. **NICU ADMITTANCE**: Participant indicated that her baby was admitted to the neonatal intensive care unit.
2) **PERCEPTION OF RISK**:
    a. **PAIN**: Participant indicated that she experienced great or excessive pain during childbirth and/or said that her planned pain management (e.g., epidural) failed.
    b. **FEELING EXHAUSTED:** Participant indicated that she felt exhausted or worn out during childbirth.
    c. **SENSE OF URGENCY:** Participant indicated that she felt rushed during her childbirth experience, either by the verbal urging of her medical team (e.g., being told there is no time to wait) or a sense of emergency (e.g., providers running, providers shouting to each other).
    d. **INFORMED OF RISK**: Participant indicated that medical professionals told her she and/or her baby were at risk of death or serious injury.
3) **POSTPARTUM ISSUES**:
    a. **BREASTFEEDING DIFFICULTIES**: Participant indicated that she was unable to breastfeed postpartum.
    b. **NEONATAL COMPLICATIONS**: Participant indicated that the baby had neonatal health problems (e.g., jaundice, needing mechanical ventilation) occurring after childbirth.

   c. **LASTING HEALTH PROBLEM – INFANT:** Participant indicated that her child has experienced health problems lasting after birth and neonatal care (e.g., not meeting developmental milestones).
   d. **LASTING HEALTH PROBLEM – MOTHER:** Participant indicated that she has experienced health problems lasting after birth and immediate postpartum care (e.g., continued chronic pain, mental health diagnosis).
   e. **OTHER POSTPARTUM DIFFICULTIES:** Participant indicated that other aspects of her postpartum experience were difficult to cope with (e.g., fear of future pregnancy, difficulty bonding with her baby).
4) **EMOTIONAL EXPERIENCE:**
   a. **NEGATIVE EMOTIONS**: Participant indicated experiencing negative emotions contributing to the difficult nature of the birth (e.g., scared, alone, angry, depressed, helpless).
   b. **SEPARATION FROM BABY**: Participant specifically mentions being separated from her child after birth (e.g., not being allowed to perform skin-to-skin contact).
   c. **POSITIVE REFLECTIONS**: Participant described positive emotions or reflections occurring after childbirth (e.g., thankful for not having lasting health problems, safety of mother and/or child).
5) **LACK OF HEALTHCARE SUPPORT:**
   a. **LACK OF SUPPORT – MEDICAL PROFESSIONALS**: Participant indicated feeling little support from medical professionals. Examples include feeling ignored, as if her wants were not listened to, uncared for (e.g., rough medical exams), lied to, and/or coerced into specific interventions.
   b. **DEVIATION FROM BIRTH PLAN**: Participant indicated that her actual childbirth experience was a deviation from her planned childbirth in some way (e.g., intended to have a vaginal birth but actually had a C-section).
6) **OTHER**:
   a. **DO NOT REMEMBER:** Unable to remember childbirth
   b. **OTHER STRESSOR:** Death in the family, had to quit job due to bed rest

TRAUMATIC CHILDBIRTH – BABY: "Please describe the specific events and experiences you had during your childbirth that made you believe your baby was in danger."

1) **MEDICAL CHARACTERISTICS:**
   a. **PREGNANCY COMPLICATIONS:** Participant indicated that complications occurring *before childbirth* (e.g., low fetal movement, infection) contributed to her belief that baby was in danger.
   b. CHILDBIRTH COMPLICATIONS: Participant indicated that complications *during birth* contributed to her belief the baby was in danger (e.g., low fetal heart rate, meconium).
   c. **NEONATAL COMPLICATIONS:** Participant indicated that the baby's medical status *after birth* (e.g., needing respiratory support, prematurity) contributed to her belief the baby was in danger.
   d. **PREMATURITY:** Participant indicated that her baby being born prematurely contributed to her belief the baby was in danger.
2) PERCEPTION OF RISK

   a. **POTENTIAL MEDICAL COMPLICATIONS:** Participant indicated that medical problems the baby was at risk for experiencing, but did not actually experience, contributed to her belief the baby was in danger. This code includes medical professionals telling her the baby was in danger of death and/or serious injury.
   b. **OTHER:** Participant indicated that other experiences contributed to her belief that her baby was at risk, including the baby not crying after birth, uncertainty about the baby's health, and having a sense of urgency or emergency.
3) **LACK OF SUPPORT – MEDICAL PROFESSIONALS:** Participant indicated that she had little support from her medical team (e.g., no doctor was present, forceful staff).
4) **OTHER:**
   a. **NO OPTIONS:** Participant indicated that she understood that there were no safe options other than emergency medical intervention during childbirth.
   b. **NEGATIVE EMOTIONS:** Participant indicated that she feared her own negative experiences (e.g., fear) would contribute to childbirth or neonatal complications.

TRAUMATIC CHILDBIRTH – MOTHER: "Please describe the specific events and experiences you had during your childbirth that made you believe you were in danger."

1) **MEDICAL CHARACTERISTICS:**
   a. **PREGNANCY COMPLICATIONS:** Participant indicated that medical complications occurring *before childbirth* (e.g., poor liver and kidney functioning) contributed to her belief that she was in danger.
   b. **CHILDBIRTH COMPLICATIONS:** Participant indicated that medical complications *during childbirth* (e.g., maternal hemorrhaging, maternal sepsis) contributed to her belief that she was in danger.
   c. **OTHER HEALTH COMPLICATIONS:** Participant experienced health problems complicating childbirth (e.g., epilepsy seizures, allergy to pain medicine).
   d. **UNRESPONSIVE TO INTERVENTION:** Participant indicated that she was unresponsive to medical interventions.
2) **PERCEPTION OF RISK**
   a. **POTENTIAL MEDICAL PROBLEMS:** Participant indicated that the risk for potential medical problems contributed to her belief that she was in danger. This code includes indication that medical professionals informed her of risk for maternal death or serious injury.
   b. **PAIN**: Participant indicated that high and/or excessive pain contributed to her belief that she was in danger.
   c. **MEDICAL PROVIDER CONCERNED:** Participant indicated that her medical provider was discussing the likelihood for negative outcomes with her family.
3) **POSTPARTUM COMPLICATIONS:** Participant indicated that medical complications, lack of support, or other factors occurring *after childbirth* contributed to her belief that she was in danger.
4) **LACK OF SUPPORT – MEDICAL PROFESSIONALS:** Participant indicated that she had little support from her medical team (e.g., no doctor was present, forceful staff).
5) **OTHER:**

HEALTH PROBLEMS: "Do you and/or your baby have lasting health problems or injuries directly related to your childbirth experience? – Other".

A. **INFANT NEUROLOGICAL:** Participant indicated infant has lasting neurological problems (e.g., brain bleeds, hydrocephalus) resulting from the childbirth experience.
B. **INFANT PULMONARY:** Participant indicated that infant has lasting pulmonary problems (e.g., chronic lung disease, asthma, apnea) resulting from the childbirth experience.
C. **INFANT VISION:** Participant indicated that infant has lasting vision problems (e.g., retinopathy, prematurity) resulting from the childbirth experience.
D. **INFANT DEVELOPMENTAL DISABILITY:** Participant indicated that infant has lasting developmental delay or intellectual disability resulting from the childbirth experience.
E. **INFANT GASTROINTESTINAL:** Participant indicated that infant has lasting gastrointestinal problems (e.g., complications from NEC, feeding tube).
F. **INFANT OTHER:** Participant indicated that infant has lasting health problem not captured in other categories (e.g., anemia) resulting from the childbirth experience.
    - **INFANT – CARDIOVASCULAR:** e.g., patent ductus arteriosus, anemia
    - **INFANT – HEARING LOSS**
    - **INFANT – INFECTION**
    - **INFANT – SCAR**
    - **INFANT – FAILURE TO THRIVE**
G. **MATERNAL UROLOGICAL/GASTROINTESTINAL:** Participant indicated that she has lasting gastrointestinal problems (e.g., incontinence) resulting from the childbirth experience.
H. **MATERNAL MENTAL HEALTH:** Participant indicated she experiences mental health problems stemming from childbirth (e.g., postpartum depression, anxiety, and posttraumatic stress).
I. **MATERNAL CHRONIC PAIN:** Participant indicated she experiences lasting pain following childbirth (e.g., pelvic or lower back pain).
J. **MATERNAL GYNECOLOGICAL:** Participant indicated she experienced lasting gynecological problems (e.g., uterine prolapse, having a hysterectomy) resulting from the childbirth experience.
K. **MATERNAL CARDIOVASCULAR:** Participant indicated that she experienced lasting cardiovascular problems (e.g., hypertension).
L. MATERNAL – MUSCULOSKELETAL: e.g., broken tail bone, diastasis rectis, poor mobility
M. MATERNAL OTHER: Participant indicated that she has a lasting health problem not captured in other categories resulting from the childbirth experience.
    - **MATERNAL – SCAR**
    - **MATERNAL – INFECTION**
    - **MATERNAL – NEUROLOGICAL:** Participant indicated that she experienced lasting neurological problems (e.g., chronic migraine, numbness, twitching).
    - **MATERNAL – UNSPECIFIED:** e.g., pre-eclampsia side effects with stressed
    - **MATERNAL – RH SENSITIZATION**

- **MATERNAL – OTHER HEALTH PROBLEM:** E.g., postpartum lupus flare, high cholesterol

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DISCLOSURE QUESTIONS

REASONS FOR DISCLOSING: "What were your reasons for communicating with someone about your childbirth experience?"

1) **TO COPE**
    a. **EMOTIONAL SUPPORT:** Participant indicated that she disclosed her childbirth experience as a means of seeking emotional support from other people (e.g., getting reassurance about her decisions, another person expressing understanding of her emotions).
    b. **WAY OF COPING**: Participant indicated that she disclosed as a form of processing the events or coping with the emotions related to her childbirth experience (e.g., venting about the experience, feeling traumatized).
    c. **NEED TO TALK:** Participant indicated that she disclosed her childbirth experience because she needed to talk about it or felt an urge to talk (e.g., to get it off her chest).
2) **TO CONNECT WITH OTHERS:** Participant indicated she disclosed her childbirth experience as a means of finding and/or connecting with other women who had similar experiences.
3) **TO CONVEY INFORMATION:**
    a. **INFORMATION:** Participant indicated that she disclosed her childbirth experience to get advice or information from others about the events that occurred during pregnancy, childbirth, and/or postpartum.
    b. **TO INFORM OTHERS:** Participant indicated she disclosed her childbirth experience to let others know what had happened (e.g., to let relatives know of the baby's health status) or in response to others' asking for information about what happened.
    c. **TO HELP OTHERS:** Participant indicated that she shared her story as a way of helping other women who experienced a similar childbirth or advocating for women who have/will experience a difficult childbirth.
4) **OTHER:**
    a. **ENJOYS TALKING ABOUT IT:** Participant indicated that she enjoys sharing her story and/or finds it interesting to discuss.
    b. **BAD MEDICAL EXPERIENCE:** Participant indicated that she disclosed to express her dissatisfaction with her medical experience.
    c. **SUPPORT PARTNER:** Participant indicated that she disclosed to support her baby's father, who was also having difficulty coping.
    d. **SHOW GRATITUDE**: Participant indicated that she disclosed to show gratitude for positive outcomes following her difficult childbirth.
    e. **SUPPORT MOTHER-BABY ATTACHMENT:** Participant indicated that she disclosed as a means of preventing problems with attachment with her baby.

f. **TO DOCUMENT THE EXPERIENCE:** Participant indicated that she disclose din order to document her childbirth experience.
g. **SOCIAL PRESSURE:** Participant indicated that she disclosed due to social pressure to talk about her experience.

REASONS FOR NOT DISCLOSING: "What were your reasons for not communicating with someone about your childbirth experience?"

A. **REACTION FROM OTHERS:** Participant indicated she did not communicate with someone about her childbirth experience because she was concerned how others would react and/or had perceived a negative reaction from others when she had previously disclosed.
    a. **ANTICIPATED NEGATIVE JUDGMENT:** Participant indicated that she did not communicate, because she expected her social partner to react negatively.
    b. **CONCERN FOR OTHERS:** Participant indicated that she did not communicate about her childbirth experience out of concern it would scare or hurt others (e.g., friend who is currently pregnant, friend who had a recent miscarriage/loss).
B. **TOO DIFFICULT TO TALK ABOUT:** Participant indicated she did not communicate about her experience because it was too hard to (e.g., too upsetting, painful, hard to verbalize).
C. **LACK OF SUPPORT**:
    a. **NOBODY TO TALK TO:** Participant indicated that she did not communicate with someone about her childbirth experience because she felt she had no one to talk to.
    b. **NO ONE UNDERSTANDS:** Participant indicated that she did not communicate with someone about her childbirth experience because she felt that no one would understand.
    c. **NO ONE CARES:** Participant indicated that she did not communicate with someone about her childbirth experience because she felt that no one would care to listen.
    d. **UNABLE TO FIND SUPPORT:** Participant indicated that wanted to disclose to a professional counselor, but she was unable to meet with one, and so did not disclose.
D. **PERSONAL CHOICE**: Participant indicated that she did not communicate because she did not feel a need to or tends to keep things private.
E. **OTHER:**
    a. **NO TIME:** Participant indicated she did not communicate with someone about her childbirth experience because she did not have time or had other things about which she was more concerned.

SOCIAL RESPONSES QUESTIONS

OTHER SUPPORT – NEGATIVE: "Is there anything else that someone has said or done related to your childbirth experience that was annoying, upsetting, made you angry, or rubbed you the wrong way?"

1) **MINIMIZING:** Participant indicated that social partner minimized her feelings by stating things were not as bad as they seemed or that things could have been worse.
    a. **COMPARING:** Participant indicated that social partner compared his/her own experience that was quite different (e.g., comparing a full-term birth to a preemie birth).
    b. **PRIORITIZING BABY:** Participant indicated that social partners made her feel unimportant or as if the baby was the only one who mattered.
    c. **CONGRATULATIONS WHEN BABY WAS IN NICU:** Participant indicated that social partners congratulated her on her childbirth without acknowledging that her baby was sick and in the NICU.
2) **DISMISSING MOM'S NEEDS**
    a. **ASKING BABY'S HEALTH STATUS:** Participant indicated that others asking for updates on the baby's health contributed to distress.
    b. **NOT LISTENED TO:** Participant indicated that she felt as if social partners were not listening to her when she discussed childbirth (e.g., rushed her through talking about it, seeming uninterested).
    c. **FOCUSING ON SELF:** Participant indicated that social partner took attention by needing to be reassured that things would be alright or discussing personal problems unrelated to childbirth.
    d. **TALKED AROUND HER:** Participant indicated that others talked about her while she was present without including her in the conversation.
3) **BLAMING:**
    a. **BLAMING:** Participant indicated that she felt as if others were blaming her for negative events of childbirth (e.g., stating she did not try hard enough).
    b. **NEEDING TO EXPLAIN CHOICES:** Participant indicated that others made her feel as if she needed to explain her reasons for the choices she made during her childbirth experience.
4) **PERSONAL NEGATIVE COMMENTS:** Participant indicated that others made personal comments that were perceived as rude or unhelpful (e.g., commenting on mother's young age, telling her to smile more).
5) **LACK OF SUPPORT**
    a. **LACK OF SUPPORT - BABY'S FATHER:** Participant indicated that lack of support particularly from the baby's father contributed to distress.
    b. **LACK OF SUPPORT – MEDICAL PROFESSIONALS:** Participant indicated that she felt unsupported by medical professionals (e.g., rude nursing staff, dismissive doctor).
    c. **LACK OF SUPPORT – FAMILY:** Participant indicated that she felt unsupported by her family during and/or following childbirth.
6) **OTHER:**
    a. **WANTED TO BE ALONE:** Participant indicated that friends would attempt to speak with her or spend time with her when she wanted to be left alone.
    b. **SHARING A ROOM WITH ANOTHER MOM AND BABY:** Participant indicated that she was assigned a hospital room with another mother who kept her baby at bedside.

c. UNABLE TO BRING PERSONAL BELONGINGS: Participant indicated that she was not able to bring her personal belongings into the hospital when she was admitted for childbirth.

d. SEEMED UNCOMFORTABLE: participant indicated that her social partner seemed uncomfortable when she tried to discuss her childbirth experience with them.

OTHER SUPPORT – POSITIVE: "Is there anything else that someone has said or done related to your childbirth experience that was helpful or comforting?"

A. EMOTIONAL SUPPORT:

a. LISTENING: Participant reported that she found others' willingness to allow her to share her childbirth experience with them was helpful.

b. **EMOTIONAL SUPPORT:** Participant reported that others' offering of emotional support (e.g., telling her she is strong, encouragement) was helpful.

c. **NORMALIZING:** Participant reported that others normalizing her experience by saying she is right or sharing a similar experience was helpful.

d. REFRAMING: Participant reported that others' reframing statements (e.g., having a healthy baby, childbirth events were meant to be) were helpful.

B. **SPECIFIC AND TANGIBLE SUPPORT:** Participant reported that others offering specific, tangible support (e.g., bringing food to the family) was helpful following childbirth.

C. PROVIDED INFORMATION: Participant reported that others providing information about the events that transpired or giving advice about what steps she could take next was helpful.

D. OTHER:

a. TALKING TO MOMS WHO "GET IT"

b. TREATMENT MOM LIKE NORMAL: Participant reported that being treated "like normal" was helpful.

c. HEARING OTHERS' BIRTH STORIES: Participant indicated that she felt better after hearing other peoples' childbirth stories.

d. NO JUDGMENT: Participant indicated that she felt particular benefit when others "didn't judge" when she disclosed.

OTHER SUPPORT – WANTED BUT NOT RECEIVED: "Is there anything else you wish someone would have done or said to you to help you with your childbirth experience?"

1) **POSTPARTUM SUPPORT:**

a. **POSTPARTUM EMOTIONAL SUPPORT**: Participant reported that she would have benefited from increased emotional support following childbirth.

b. **SHOW CONCERN FOR MOM:** Participant reported that she would have liked others to show more concern for her own wellbeing.

c. **PEER SUPPORT:** Participant reported that she would have liked to have peer support from other mothers who had a similar experience.

d. **ACKNOWLEDGEMENT**: Participant reported that she would have benefited from others acknowledging that her negative childbirth experiences occurred.

e. **TANGIBLE SUPPORT:** Participant indicated that she wanted tangible support, including information for mental health resources

    f. **FAMILY/PARTNER SUPPORT:** Participant indicated that she would have liked more support from family, friends, and/or her partner.
2) **SUPPORT FEOM MEDICAL PROFESSIONALS:** Participant indicated that she wanted more support from her medical team during her pregnancy, childbirth, and postpartum.
3) **EVENTS OCCURING DURING BIRTH:**
    a. **EMOTIONAL SUPPORT DURING BIRTH:** Participant reported that she would have benefited from increased emotional support *during* childbirth (e.g., being told that she was doing a good job while in labor).
    b. **PRIOR KNOWLEDGE:** Participant reported that she would have benefited from her medical team discussing potential negative occurrences and/or outcomes prior to her childbirth.
    c. ADVOCATE: Participant reported that she wanted her partner/family/friends to advocate for her needs with her/baby's medical team.
    d. **SELF – BEING MORE OPEN:** Participant said she would have liked to have been more open to potential necessary procedures/changes to the birth plan (e.g., had been more open to having a C-section).
4) **UNDERSTANDING OF EVENTS:** Participant reported that she would have benefited from her medical team providing a better understanding of the childbirth events that transpired and/or potential causes of these events.
5) **OTHER:**
    a. **GIVING PERMISSION:** Participant reported that she would have benefited from others telling her she was allowed to experience negative thoughts and emotions about her childbirth.
    b. **NOT BEING RUSHED**: Participant indicated that she did not want to feel rushed when discussing her childbirth.
    c. **TELLING HER WHAT TO DO**: Participant indicated that she wanted a medical providers to tell her what was the best choice rather than being burdened with choice.